

4446  
NORFOLK COUNTY COUNCIL.

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# ANNUAL REPORT

OF THE

COUNTY MEDICAL OFFICER OF HEALTH

AND

SCHOOL MEDICAL OFFICER

FOR THE YEAR

1911,

BY

J. T. C. NASH, M.D., D.P.H.,  
C.M.O. & S.M.O.

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PART II.

REPORT OF THE COUNTY MEDICAL OFFICER

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## TO THE NORFOLK COUNTY COUNCIL.

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My Lords and Gentlemen,

I beg to present my Annual Report for the year 1911.

As formulated in the Regulations of the Local Government Board, it is divided into Sections dealing with Housing, Water Supply, Midwives, Isolation Hospital Administration, River Pollution, Sale of Food and Drugs Acts, etc.

I have found it necessary for reference and completeness to reintroduce certain Statistical Tables on which my Report is largely based. No County Report can be considered satisfactory without them, and the Report is for the information of the Local Government Board as well as for the Local Authorities.

I am glad to note that only 5 of the 33 Reports of the District Medical Officers of Health were not printed, and of these only 1 (that of West Lynn) was in manuscript.

I must repeat that it would be a useful feature if in future each District Medical Officer of Health would include a Summary of Improvements effected during the year under consideration in his District, as well as of matters remaining under consideration or in abeyance which have been referred to in previous Reports.

I regret to have to record the deaths of Dr. Alfred Harris, who was M.O.H. of the Thetford Urban and Thetford Rural Districts, and of Dr. T. W. Richardson, who was M.O.H. for the Erpingham R.D. Dr. E. G. Wales, M.O.H. of Downham Market Urban District, resigned his position after nine years' valuable service. Dr. Oliver succeeds Dr. Harris as M.O.H. for the Borough of Thetford, Dr. Cowan succeeds him as M.O.H. to the Thetford R.D., and Dr. Linnell has been appointed M.O.H. for Erpingham R.D.

Your obedient Servant,



## Administrative County of Norfolk—Area and Population.

The Census of 1911 states that the area of the Administrative County in statute acres (land and inland water) is 1,303,570, accommodating 77,600 families or separate occupiers and 321,733 persons, of whom 159,381 are males and 162,352 are females. Proportion of females to 1000 males = 1019.

The increase of population during the intercensal period is 10,418, or an increase of 3.3 per cent., as compared with an increase of 10.89 per cent. for England and Wales as a whole. The average annual increase of population was therefore 1,042 persons.

An increase of population is recorded in 10 of the 12 Urban Districts, the largest increases being in Sheringham (42.8 per cent.), in Hunstanton (32.6 per cent.), and in Walsoken (19.9 per cent.). The smallest increase was in Diss (0.6 per cent.), whilst King's Lynn showed a decrease of 0.4 per cent., and Swaffham a decrease of 4.1 per cent.

It is satisfactory to note that of the 20 Rural Districts, 17 show an increase, the exceptions being Depwade, Henstead, and Swaffham, which show percentage decreases of 0.9, 0.7, and 1.0 respectively. The remaining Rural Districts show increases from 0.5 in Forehoe to 9.1 in Marshland, while West Lynn records the high water-mark of 41.2 per cent.

The mid-year population is taken for statistical purposes, and therefore the population for each District should be estimated according to the rate of increase or decrease revealed for 10 years by the census figures. For the mid-year 1911 that would be an addition or subtraction of 1-40th of the actual increase or decrease during the intercensal period. But, of course, the present circumstances may vary, and each Medical Officer of Health should decide best how to calculate the mid-year population.

DISTRICT.	Area in Acres (Land and Inland Water).	POPULATION		Increase or Decrease per cent.	
		1901.	1911.		
URBAN.					
Cromer ..	1,062	3,781	4,073	7·7	
Diss ..	3,674	3,745	3,769	0·6	
Downham Market ..	1,003	2,472	2,497	1·0	
East Dereham ..	5,313	5,545	5,729	3·3	
New Hunstanton ..	359	1,893	2,511	32·6	
North Walsham ..	4,256	3,981	4,254	6·9	
*Sheringham ..	877	2,364	3,376	42·8	
Swaffham ..	7,592	3,371	3,234		4·1
Walsoken ..	4,907	3,250	3,898	19·9	
Wells ..	2,670	2,494	2,565	2·8	
King's Lynn M.B. ..	3,067	20,288	20,201		0·4
Thetford M.B. ..	7,096	4,613	4,778	3·6	
Totals ..	41,876	57,797	60,885		
RURAL.					
Aylsham ..	69,341	17,053	17,344	1·7	
Blofield ..	45,785	11,845	12,159	2·7	
†Depwade ..	79,742	20,115	19,933		0·9
†Docking ..	88,091	15,741	16,942	7·6	
Downham ..	81,930	14,837	15,527	4·7	
Flegg East and West ..	28,991	9,191	9,929	8·0	
†Erpingham ..	62,218	16,118	17,137	6·3	
Forehoe ..	38,528	11,329	11,383	0·5	
Freebridge Lynn ..	75,075	11,847	12,106	2·2	
Henstead ..	42,380	10,358	10,285		0·7
West Lynn ..	1,638	662	935	41·2	
Loddon and Clavering ..	60,273	12,393	12,550	1·3	
Marshland ..	54,572	11,352	12,382	9·1	
Mitford and Launditch ..	102,371	18,437	18,698	1·4	
†St. Faith's ..	48,933	10,378	10,807	4·1	
Smallburgh ..	62,627	13,348	13,424	0·6	
Swaffham ..	74,556	7,644	7,571		1·0
†Thetford ..	95,873	9,950	10,061	1·1	
Walsingham ..	79,996	17,127	17,250	0·7	
†Wayland ..	68,774	13,793	14,425	4·6	
Totals ..	1,261,694	253,518	260,848		
Urban Districts ..	41,876	57,797	60,885		
Rural ..	1,261,694	253,518	260,848		
Total ..	1,303,570	311,315	321,733		

\* Created since 1901. † Boundaries changed since 1901.

An under-estimate is less unsatisfactory than an over-estimate in checking the vital statistics as given by the District Medical Officers of Health, with the single exception of the birth-rate. The infantile mortality rate is of course independent of the population; being based on the number of deaths of infants under 12 months of age per 1000 children born during the year.

## The Birth-Rate.

According to the returns made by the District Medical Officers of Health there were registered during 1911, in the Urban Districts 1,292 births, and in the Rural Districts 5,706, or a total of 6,998 births, giving for an estimate of a population of 321,994 persons in the middle of 1911 (as based on the Census population of 321,733 in April, 1911, as compared with the Census population of 311,315 in 1901), a birth-rate for the Administrative County of Norfolk of **21·7** for the year 1911.

The birth-rate for England and Wales in 1911 was 24·4, the lowest on record. Norfolk has therefore a birth-rate of 2·7 below that of the country in general. It is not yet possible to calculate to what extent this difference may be affected by age and sex distribution.

The following are the revised birth-rates for the Administrative County of Norfolk since 1907, the year for which the first Report of the County Medical Officer of Health was published :—

Year	..	1907	1908	1909	1910	1911
Birth-rate	..	22·68	22·66	21·86	21·8	21·73

A continuous decline in an already low birth-rate is clearly evident, and I would refer to remarks in previous reports as to the importance of this matter.

## The Death-Rate.

The total deaths recorded in the District Medical Officers' Returns amount to 4244 for the year 1911, but the Report for Blofield R.D. excludes all statistics relating to the County Asylum. 114 deaths which occurred in the County Asylum during 1911 must therefore be added, making a total of 4358 deaths in the Administrative County of Norfolk.



When these Asylum deaths are distributed *pro rata* between the Urban and Rural Districts the uncorrected death rates per,1000 population for the Administrative County of Norfolk work out as follows:—

Urban Districts	..	..	..	14·12
Rural Districts	..	..	..	13·41
Administrative County of Norfolk			..	13·54

Applying the correction factor for age and sex, the corrected death rate for the Administrative County of Norfolk for the year 1911 is 11·18. The death rate for England and Wales for 1911 is 14·6; and for England and Wales less the 213 chief towns 13·1 is the corrected death rate.

In my last Annual Report I stated my opinion that the low death rate of 1910 was chiefly owing to the favourable meteorological conditions which existed during that year. The hot summer of 1911 was less favourable to health as reflected in the higher death rate throughout England.

The small sea-coast Urban Districts of Cromer, Sheringham, and New Hunstanton again had low death rates—corresponding with their low birth rates. Amongst the Urban Districts the highest uncorrected death rates were recorded in Walsoken 18·72 (population 3894), Swaffham 16·07 (population 3247), and North Walsham 14·78 (population 4260).

Amongst the Rural Districts the highest uncorrected death rate was recorded in Loddon and Clavering 16·25 (population 12,550), and the lowest in St. Faith's 11·47 (population 10,807), and West Lynn 7·45 (population 908).

## **Infantile Mortality.**

This is the number of deaths of infants under one year of age registered during the year, being calculated per 1000 infants born during the year.

In the Urban Districts 128 infant deaths occurred and 1292 births were registered, giving an infantile mortality for the Urban Districts of just over 99. In the Rural Districts 571 infant deaths were registered, and 5706 births, giving an infantile mortality figure for the Rural Districts also just over 99.

In the Administrative County of Norfolk the infantile mortality figure for 1911 works out at 99·19. Of the 699 deaths of infants under 1 year, 691 were stated to be certified, and 8 uncertified. Measles accounted for 3 deaths,







and Whooping Cough for 25 deaths of infants under one year of age. Diarrhœal diseases accounted for 99 deaths, of which 79 were ascribed to Diarrhœa and 20 to Enteritis; 145 deaths were ascribed to premature birth, and of these 103 died within one week of birth, and 130 within one month of birth. Fifteen additional deaths were ascribed to congenital defects, while no fewer than 141 infant deaths were ascribed to Atrophy, Debility, and Marasmus, 90 of these being children under one month. I repeat that these are largely preventable deaths, and many of these infants' lives would be saved if notification of births was adopted, to be followed up by prompt visits from properly trained health visitors capable of detecting and rectifying faulty methods of feeding and hygiene. Seventeen infants' deaths were ascribed to tuberculous diseases, six to Syphilis, and 88 to Bronchitis and Pneumonia. Two deaths were due to overlying and suffocation, and five were ascribed to rickets. Many of these deaths were obviously avoidable, and it is only too clear that many infant lives are sacrificed for want of knowledge.

I have in previous Reports dilated upon the correlation between meteorological conditions and infantile mortality. This is once more emphasised in the largely increased infantile mortality in 1911, which was *annus mirabilis* for its summer of heat and drought.

The contrast with the reduction in the infantile mortality in 1910 was very marked, as shown by the following figures :—

1907	1908	1909	1910	1911
91·82	102·69	82·49	70·47	99·17

Among the Urban Districts the infantile mortality figure was again highest in Walsoken with the terrible figure of 206·08, and again lowest in New Hunstanton (34·48) due to one infant death among 29 infants born in the course of the year.

Among the Urban Districts the infantile mortality figure exceeded 100 in four towns.

Among the Rural Districts the infantile mortality figure exceeded 100 per 1000 births in 11 districts. It was below 75 in only two Rural districts (Marshland and St. Faith's).



It is my duty to point out that Walsoken, year after year, has an infantile mortality considerably above the average, and in 1911 it reached an appalling figure for a country town. It would be interesting if a closer analysis of this mortality were made by the M.O.H. dividing the District into definite sub-districts, and noting separately the number of deaths of infants under one year in each area. This might be applied to past years by looking up the Registers of Deaths. Enquiry should then be made into the relative population and sanitation of each Sub-district, noting—(1) the class of dwelling, (2) the class of inhabitant, (3) the amount and condition of yard area, (4) the provision for the collection of house refuse, (5) the method of disposal of house refuse, (6) the method of dealing with excrement, (7) the prevalence of house flies in the Summer months, (8) the means of storing food in each house, and so on. It would be of interest to know how adjacent to one another were houses in which deaths from Diarrhœa occurred last year (1911), and to have particulars as to the methods of feeding of the infants. Enquiry should be made in each known case of Diarrhœa as to what the child is fed on; how its food is prepared; what, if any, precautions are taken to preserve it from contamination by flies or dust; the relative position of kitchen, larder, ashpit, and privy; the kind of feeding bottle used—if the child is not wholly breast-fed, and so forth.

PREMATURE BIRTH.—Every year since 1908 I have drawn attention to the disquieting feature of a regular increase of infantile deaths during the first few weeks of life. This increase was accentuated in 1911.

The increase in the number of deaths during the child's first week of life opens up a vista of possible causes, which need the gravest consideration as to the best means of combating various circumstances which are imperilling our future as a nation. Observations I have made in experiments on larval life suggest that some of these premature and immature births may be largely correlated with insufficient nourishment of the mother (through poverty, too often).

It follows, as the night the day, that a diminished birth rate, and an increased number of infant deaths, attributed to premature birth and inanition, must impoverish our future manhood. Influences are abroad which to some extent account for this, and these should, as far as possible, be counteracted by appealing to patriotism and to individual parents.



Educate parents to realise that it is their duty to give healthy children to the State. With these few preliminary remarks added to those I have made in previous reports, I now quote extracts from the reports of those District Medical Officers of Health who have given some thought to the subject.

Dr. Cross, M.O.H., Downham, writes:—"The notification of Births Act is not in force in the district. In previous reports (1907 and 1910) I referred to the advisability of adopting this Act. I understand that there is great objection on the part of Medical Practitioners being called upon to notify births under a penalty. The onus of notifying should rest entirely with the parent or midwife in attendance.

"There are five registered midwives practising in the district, and are under the supervision of the Lady Inspector of Midwives of the County.

"There are no district nurses, but two nurses in adjoining districts sometimes attend cases in adjacent villages in this district. The district nurse at Shouldham has left, and her place has not yet been filled.

"It is extremely doubtful how far an organisation of Health Visitors would be practicable in a large rural district. No doubt some practical advice would be beneficial. The very fact that the children were liable to be visited would make some parents more careful, and information as to the condition of the interior of homes would be valuable to the Sanitary Authority.

"Various causes influence adversely infantile life, especially laborious work on the part of pregnant mothers, insanitary conditions both inside and outside the home, no provision for storage of food, insufficient sleeping accommodation, over indulgence in alcohol on the part of both parents, and errors in feeding. Many children are hand-fed. It is seldom that an illegitimate child is nursed, since the mother has to go out to earn her living. Great difficulty is often experienced in getting fresh milk, and children are brought up on skimmed milk or bread sop.

"I know that some authorities maintain that the housing question has no real influence on infantile mortality, but in my opinion before we can see any lasting improvement there must be better homes."

Dr. Linnell, M.O.H., Sheringham, states:—"During the year the advisability of adopting the Notification of Births Act was sympathetically discussed by the Sanitary Committee.

"It would be useless to adopt the Act unless we are prepared to appoint a Health Visitor to visit the homes of recently confined women, and instruct them in the feeding and management of the infant."

Dr. Back, reporting to the Aylsham Rural District Council, says :—

"The mortality of illegitimate children is generally found to be higher than among infants born in wedlock, but in this particular year the difference is very marked. Twenty-six legitimate infants died out of 340 legitimate children born, giving a rate of 76 per 1000 births. But among the 25 illegitimates born there were as many as eight deaths, which gives the astounding rate of 320·0 deaths per 1000 illegitimate births."

"Among other interesting facts to be gathered from Table IV. is the absence, with the exception of one death from Measles, of deaths from infectious disease. There are recorded, however, four deaths from Diarrhœa which may no doubt be credited to the infection of food by flies, which were much in evidence during the summer months. It will also be noted that of the 34 deaths 14 occurred in the first seven days of life, a period during which the survival of the delicate infant most depends on skilful attention."

Among his remarks to the Blofield Rural District Council are the following :—

"There were no deaths among infants from the ordinary infectious diseases, but as might be expected with a long, hot and dry summer, favouring the infection of milk with microbes, carried by both flies and dust, there were some fatalities from Diarrhœa and Enteritis. The four deaths registered as due to these two diseases must be classed among 'preventible deaths' for the lives of these infants would probably have been saved had proper precautions been taken to protect their food from infection."

Dr. J. C. R. Robinson, of Depwade, comments :—

“ Infant mortality is somewhat higher than that of 1910, the total for 1911 being 48. Eighteen deaths occurred in infants under one week old, and therefore may be put down to congenital defects, injury, and premature birth. Only three cases of death from epidemic sickness.”

Dr. T. Lambert Lack reports to the Forehoe Rural District Council :—

“ The number of deaths under one year was 27, a rate per 1000 of 105·8. Seventeen of the 27 were due to premature births with subsequent Atrophy, Debility and Marasmus.”

Dr. McLintock, M.O.H., of Loddon and Clavering, says :—

“ Premature birth accounts for nine deaths, and four other deaths are attributed to Atrophy, Debility and Marasmus. These are the causes which want to be fought to lower this rate.”

Dr. Forrest, of Marshland, records eight infant deaths due to premature birth and nine to Diarrhœa, out of a total of 25.

Dr. Long, M.O.H. of St. Faith's R.D., writes :—“ In spite of the unprecedented hot and dry summer the infant mortality in the district was only 69. This may be considered satisfactory, as although it is still comparatively high, the rate has been gradually declining in the district for several years past, and still further declined during last year. There were but two deaths of infants caused by epidemic Diarrhœa or Enteritis. This satisfactory result is in a great measure attributable to the unceasing way in which insanitary dwellings have been attacked by the Council, through its officers, during the past few years; in part, also, to the improved conditions under which milk is now produced and stored in the various dairies in the district as compared with a few years ago; and credit must also be given to the mothers for the more intelligent care they are beginning to exercise in the rearing of their infants. This knowledge concerning infant feeding is not being distributed by written instructions, which would be of little avail with such a population, but is being gradually diffused by the medical men practising in the district, by the local hospitals, and by the district nurses whenever opportunity offers.”



Dr. Rose, reporting to the Swaffham R.D.C., says :—" The education of mothers in the feeding and general care of their babies is the surest method of reducing infant mortality. I think I have pointed out before that the distribution at the time of registration of a leaflet on the feeding and management of infants would prove of considerable value. Results might not be immediately noticeable, but future generations would benefit. Very possibly the deaths due to Debility and Marasmus would be reduced."

Dr. Fisher, M.O.H. of the Walsingham U.D., commenting on the low infantile mortality which again characterises this District, and particularly on the few deaths from Diarrhoea, says :—" The large majority of the babies in this District are breast-fed."

Dr. E. F. Rose, reporting on Infantile Mortality in the Wayland R.D., remarks :—" The County Medical Officer of Health has pointed out the influence of a wet, cool summer in reducing infant mortality, consequently, a dry, hot summer should increase it, acting largely through the concomitant increased prevalence of flies, carrying germs of disease and infecting milk and other foods ; hence, one would expect to find that a good proportion of the infant deaths during last year were due to gastro-intestinal trouble, but, on examining the causes of these deaths, I find that only two were due to gastro-enteritis, which goes to prove that greater care has been exercised in protecting milk and keeping it clean and sweet, and in the general feeding of infants.

" There is no single disease which has caused an undue number of deaths ; eight were due to Congenital Defects and Marasmus, four were certified 'Convulsions,' without further definition, Whooping Cough and Tuberculous Diseases were responsible for three each, the remainder being due to various other diseases. One infant was found dead in a moat, cause of death being unknown."

Dr. E. G. Wales in his last report as the M.O.H. to the Downham Market U.D.C., records that of the seven infant deaths four were due to premature birth and conditions associated therewith. The Council continues to distribute cards of instruction on the feeding and care of infants, with benefit.



## Infectious Diseases.

The compulsorily notifiable diseases are Small Pox, Scarlet Fever, Diphtheria, Membranous Croup, Enteric Fever, Relapsing Fever, Continued Fever, Puerperal Fever, Cholera, Typhus Fever, Erysipelas, Plague. To these have been added, since January 1st, 1912, Pulmonary Tuberculosis (which had previously been notifiable only in Poor Law and Hospital practice) and Cerebro-Spinal Fever and Poliomyelitis.

A Local Authority may by resolution extend compulsory notification to any other infectious disease, if confirmed by the Local Government Board.

Weekly returns are made by District Medical Officers of Health to the County Medical Officer as well as to the Local Government Board, and once a month the Medical Officers of Health make a return of the infected parishes, which also gives an opportunity of amplifying or otherwise checking the weekly returns.

The following table shows the distribution of the chief compulsorily notifiable diseases—Scarlet Fever, Diphtheria, and Enteric Fever. In each disease there was an increase on the numbers notified in 1910, but a decrease as compared with the average number of notifications for the four preceding years :—

COUNTY OF NORFOLK, 1911.—DISTRIBUTION OF

SANITARY DISTRICTS.	DIPHTHERIA.					SCARLET		
	Number of Cases notified.	Number of Deaths.	Cases notified per 1000 population.	Death Rate per 1000 population.	Deaths per 100 Cases notified.	Number of Cases notified.	Number of Deaths.	Cases notified per 1000 population.
Rural Districts—								
Aylsham ..	8	1	0·46	0·05	12·5	6		0·34
Blofield ..	1		0·09			12		1·08
Depwade ..	6	2	0·30	0·10	33·33	12		0·60
Docking ..	13	2	0·76	0·11	15·38	10		0·59
Downham ..	1		0·06			26	1	1·67
Erpingham ..	13	1	0·75	0·05	7·69	14		0·81
Flegg E. and W. ..	7		0·74			3		0·31
Forehoe ..	23	1	2·03	0·08	4·34	5		0·44
Henstead ..	24	2	2·33	0·38	12·50	30		2·91
Loddon and Clavering	16	2	1·27	0·15	12·5	10		0·79
West Lynn ..		1		1·06				
Freebridge Lynn ..	3	1	0·24	0·08	33·33	9		0·74
Marshland ..	3		0·24			15		1·21
Mitford and Launditch	21	3	1·12	0·16	14·28	7		0·37
St. Faith's ..	15	1	1·38	0·09	6·66	14		1·29
Smallburgh ..	23		1·71			13		0·96
Swaffham ..	1		0·13			8		1·05
Thetford ..						7		0·69
Walsingham ..	66	4	3·82	0·23	6·06	63	1	3·65
Wayland ..	6		0·41			67		4·64
Total Rural Districts	250	21	0·96	0·07	8·00	331	2	1·27
Urban Districts—								
Cromer ..	4		0·92			5		1·15
East Dereham ..						6		1·04
Downham Market ..	1		0·40			1		0·40
Diss ..	2	1	0·53	0·26	5·00			
Hunstanton New ..	1		0·39			2		0·79
Sheringham ..	1		0·29					
Swaffham ..								
Walsham North ..						1		0·23
Walsoken ..	7		1·90			9		2·30
Wells-next-Sea ..	1		0·39			25		9·76
Thetford M.B. ..	3		0·62					
King's Lynn M.B. ..	10		0·49			12		0·59
Total Urban Districts	30	1	0·49	0·01	3·33	61		0·99
Total Whole County ..	280	22	0·87	0·06	7·50	392	2	1·22

## CHIEF COMPULSORILY NOTIFIABLE DISEASES.

FEVER.		ENTERIC FEVER.					DISEASES MOST PREVALENT.
Death Rate per 1000 population.	Deaths per 100 Cases notified.	Number of Cases notified.	Number of Deaths.	Cases notified per 1000 population.	Death Rate per 1000 population.	Deaths per 100 Cases notified.	
0.06	3.84	1		0.05			Diphtheria
		4	1	0.36	0.09	25.00	Scarlet Fever
		3		0.15			"
		2		0.11			Diphtheria
		21	5	1.35	0.32	23.80	Scarlet Fever and Enteric Fever
		9		0.52			Diphtheria and Scarlet Fever
		5	1	0.52	0.10	20.00	Diphtheria
		1		0.08			"
		1	1	0.09			Diphtheria and Scarlet Fever
		5	2	0.39	0.15	40.00	Diphtheria
		1		1.06			
		2		0.16			Scarlet Fever
		3		0.24			"
		3		0.16			Diphtheria
		3		0.27			Diphtheria and Scarlet Fever
0.05	1.58	5	1	0.37	0.07	20.00	Diphtheria
							Scarlet Fever
		6		0.59			"
		6	1	0.34	0.05	16.66	Diphtheria and Scarlet Fever
		1		0.06			Scarlet Fever
0.007	0.60	62	13	0.23	0.05	20.96	
		6		1.38			Enteric Fever
		1		0.40			Scarlet Fever
							Diphtheria (2 cases)
							Scarlet Fever (2 cases)
		1		0.30			
		3		0.76			Scarlet Fever
							"
		19	4	0.94	0.19	21.05	Diphtheria
							Enteric Fever
		30	4	0.49	0.06	10.33	
0.006	0.51	92	17	0.28	0.05	18.48	



Diphtheria was somewhat in excess in the districts of Forehoe, Henstead, Loddon and Clavering, Mitford and Launditch,, St. Faith's, Smallburgh, and Walsingham, particularly in the last-named district, where the cases of Diphtheria notified were equivalent to 3·82 per 1000 of the population.

Scarlet Fever was most prevalent in Downham Rural, Henstead, St. Faith's, and particularly in Wells, where the notification rate was as high as 9·76 per 1000 persons.

Enteric Fever was most prevalent in the Downham Rural District, and in the Borough of King's Lynn, and in Cromer. The relative incidence was highest in the Downham Rural District at the rate of 1·35 per 1000 persons.

The case mortality or number of deaths per 100 cases notified was greatly reduced as regards Scarlet Fever, only 2 deaths occurring among 392 cases notified, giving a case mortality of 0·51. The Scarlet Fever Zymotic death rate was only ·006 for the County.

The case mortality for *Diphtheria* was also satisfactory (7·50), though above the extraordinarily low figure recorded in 1910.

On the other hand as regards *Enteric Fever*, 17 deaths were recorded among 92 notified cases, giving a case mortality of 18·48. This is an average case mortality rate for Enteric Fever.

The hospital isolation of cases of Enteric Fever is of undoubted use as a preventive measure where it can be applied. In my experience I have had a notification of Enteric Fever in an adult, which on enquiry I found was subsequent to a series of mild cases among the children of the family, the infection from one to another being clearly traceable at intervals of about 12 or 14 days. The nature of these cases had been overlooked, but by obtaining specimens of blood from each child for the Widal reaction I found this test most decidedly and markedly positive in every affected child. Unless all the excretions from a case of Typhoid Fever are carefully disinfected at the time, various opportunities for the spread of infection occur. Any person nursing or attending to the wants of a case of Typhoid Fever should most scrupulously wash the hands before eating or carrying their hands to their mouths for any purpose, or before preparing meals for children or other persons.



It is interesting to note that a considerable proportion of cases were attributed to shell-fish. Faulty drainage and unsatisfactory drinking water were associated with some cases. In some cases infection had been acquired elsewhere than in the place where the patient was taken ill.

The following are extracts from the District Reports as regards ENTERIC FEVER:—

*Aylsham*.—"One case only has been notified, and it was not possible to trace the source of the infection. During the last three years only two cases of Enteric have occurred in the District, and, as the absence of Enteric is a fair index of the sanitary condition of a locality, it is satisfactory to note the rare occurrences of this disease in recent years."

*Blofield*.—"Four cases were notified. In the Acle case the infection was derived from Brittany, and in the Reedham case there was strong suspicion of infection from mussels. Source of infection of other two cases not traced.

"No difficulty was experienced in the nursing, or the disposal of the excreta of these patients, except in the Thorpe case, which was very promptly removed to the Norfolk and Norwich Hospital."

*Depwade*.—"There were three notifications, viz., 2 at Earsham and 1 at Alburgh."

*Docking*.—"Two cases, one at Ringstead, one at Waterden. I visited both cases, but in neither could I find any probable cause. The water and sanitary arrangements were satisfactory in both cases. There was a history of eating shell-fish (cockles from the beach), in the Ringstead case, three weeks before the attack."

*Downham*.—"These were 21 cases of Enteric Fever. It is five years since so many cases have been notified. Most of the cases occurred during the last quarter of the year, and at the close of a long dry summer, with its attendant evils of a shortage of water supply and myriads of insects.

"In investigating the possible origin, it was generally found that the cases occurred in damp and unhealthy houses, whilst the sanitary surroundings were far from satisfactory. The disposal of slops and refuse were generally primitive, and there were no proper ash-bins.

“There was a certain amount of Diarrhoea throughout the District, but hardly in an epidemic form.”

*Erpingham.*—“Nine cases of Enteric Fever occurred. The case at Briston was clearly traced to a defective state of the drainage at Melton Constable, where the patient had been residing for two or three weeks.

“The cases at Northrepps were in the neighbourhood of a polluted well, which was condemned, as the water was found on bacteriological examination to be unfit for human consumption.”

*Flegg E. and W.*—“Five notifications; one death.”

*Forehoe.*—“One notification, attributed to eating mussels at Norwich Market.”

*Henstead.*—“One case which proved fatal at the Norfolk and Norwich Hospital to which the patient was removed; cause of Enteric not made out.”

*Loddon and Clavering.*—“There were five cases notified, of these 2, and possibly a third, were imported from other Districts; the fourth contracted the disease after emptying a very old cesspool. In the fifth case there was a strong suspicion of some oysters being the carriers of the infection. Two of the cases were fatal.”

*Freebridge Lynn.*—“Only two cases notified—1 case in the parish of Hillington, supposed to be due to eating raw cockles; 1 case in the parish of Gayton, due to well contaminated by drain. This has been rectified.”

*Mashland.*—“Three cases, 1 of which was negative to Widal’s test. Upwell 2; Emneth 1.”

*Mitford and Launditch.*—“Three cases of Typhoid Fever were notified. Two had consumed shell-fish at about the period necessary to cause infection.”

*St. Faith’s.*—“Only three cases notified.”

*Smallburgh.*—“Five cases notified—1 death. Faulty drainage was found in all these cases and unsatisfactory drinking water.

“Of the two cases at Ludham, 1 was contracted whilst nursing the other case.”

*Thetford.*—“Six cases were notified ”

*Walsingham.*—"Six cases in four parishes. In the Dunton case there seemed to be reason to attribute it to shell-fish. The cases at Melton occurred in the Gordon Road, and the West Raynham case, which was fatal, had visited a house in this road shortly before his illness. Several cases have occurred in this row of houses in recent years; the water supply is derived from two shallow wells. On analysis, one was found to be contaminated, and was closed; and in consequence of drought in the summer, there was a shortage of water in the remaining one. In consequence of this, the water closets, which were all hand flushed, did not receive an adequate supply, and were coated and dirty, and the drain at the first inspection chamber more or less blocked with accumulation of fæcal material; there were also in the small gardens of the houses several heaps of decaying refuse, affording an excellent breeding place for flies."

There was here a possibility of fly-borne infection, or, as Dr. Fisher mentions in his Report, the possibility of a human "carrier" living in the row. To obtain evidence in either of these directions would have necessitated extensive bacteriological research, such as could have been best and most economically carried out in a County Laboratory. No action was taken in these directions, but other important practical measures were taken as detailed by Dr. Fisher, viz.:—"The infected closets and drains were thoroughly disinfected and flushed, and the heaps of refuse removed." On Dr. Fisher's recommendation a scavenger was appointed by the District Council to secure effectual scavenging in the future.

*Wayland.*—"There was 1 case, which was, I have no doubt, contracted during a visit to the sea-side, the patient developing symptoms of the disease about a week after her return home. No further cases were notified."

*Cromer.*—"There were six notifications. The first in a child, aged 4, who was living in a house where the inside soil pipe had been defectively mended, and which allowed sewer gas to escape into the house. The second, a man who had been working outside Cromer, and probably contracted the disease at his work. Third, a servant who had recently come from the country, and was treated and notified after admission to Cromer Cottage Hospital. Fourth, another servant also notified after admission to the Cottage Hospital, had been eating watercress a fortnight before. Fifth, a man who had been eating raw mussels, isolated at home. Sixth, a boy."



*Downham Market.*—"Only one notification. This case was moved into the Workhouse Infirmary from a parish outside the District owing to extreme poverty and lack of nursing at home."

*Swaffham.*—"One notification."

*Walsoken.*—"Three notifications."

*King's Lynn.*—"Twenty notifications—One was probably due to eating shell-fish."

*Aylsham.*—CONTINUED FEVER—"This was a case diagnosed bacteriologically as para-typhoid."

## DIPHTHERIA.

*Aylsham.*—"One death from Diphtheria, that of a child, aged 2 years, who died six weeks after the beginning of the disease from heart paralysis. Eight cases were notified, but not more than two from any one parish. Diphtheria was not therefore epidemic in the District."

*Blofield.*—"This disease had been in the ascendant in the District for the last few years. Eight cases were notified in 1908, 13 in 1909, and 18 in 1910. It is therefore very satisfactory to have only a single case to record for 1911."

"The increase in this much feared disease in recent years is more apparent than real, and is due to the fact that in every suspicious case of sore throat a swab is now taken and sent to Dr. Claridge, who acts as bacteriologist to the District, for report. In a certain number of cases the specific bacteria of Diphtheria are discovered. The case is then notified and precautions taken to prevent the spread of the disease by isolating the patient, as far as possible, while the persons living in the same house are protected by prophylactic injections of anti-toxin."

*Docking.*—"Thirteen cases. Three parishes affected."

"In September a case was notified in Syderstone of a child attending the School there. Met the County Medical Officer of Health in consultation; five children present at School presented suspicious symptoms, swabs were taken from their throats and two of them were returned as positive. I informed their Doctor, who notified and took charge of the cases; the School was not closed. There were five cases in all at Syderstone. I visited the



home of the first case notified and found the sanitary arrangements were not satisfactory. The Inspector reported this to your Council. Notice to remedy the defects was served."

"In Heacham there were seven cases in all. When the first case in the village was notified, I visited the School and also several children who were absent through illness. I only found one child at all suspicious, a swab from her throat was returned as negative; three days later another child was reported by the Schoolmaster as absent with sore throat. I visited the house and took a swab, which was returned as negative. Three days after this the Headmaster complained of sore throat, I isolated him, took a swab; this was returned as positive. I advised closure of the School, and the County Medical Officer of Health approved. On December 19th and 21st I had two cases in my own practice there and others were notified. The epidemic extended into the present year. There was one death."

*Downham.*—"Only one case of Diphtheria was notified. This was contracted outside the District where the patient had been nursing her daughter."

*Erpingham.*—"There were 13 notifications of Diphtheria with only one death."

*Flegg East and West.*—"Seven notifications during year."

*Forehoe.*—"Twenty-three notifications of Diphtheria. All patients recovered; an illustration of the great value of the anti-toxin treatment."

*Henstead.*—"Twenty-four cases occurred in seven parishes, mortality 2, 5 in Hethersett, 6 in Cringleford amongst the School children, 1 in Keswick from the Cringleford School, 1 in Intwood from the same School, 5 in Ketteringham, the first case proving fatal shortly after the doctor was called in; this case was probably contracted after a case that occurred in the same house in 1910; the other 4 cases were probably contracted at the School from the first one; 3 in Trowse Newton, and 3 in Surlingham, probably contracted in Norwich."

*Loddon and Clavering.*—"There were 16 cases of Diphtheria notified, which is the highest number since 1907."

“I am quite convinced that Diphtheria is chiefly spread by personal contact, and that the bacilli will thrive in the throats and noses of patients for weeks, and even months, after all symptoms of the disease have disappeared. Two of the cases were fatal.”

*Freebridge Lynn.*—“Three cases of Diphtheria were notified, and one notification of death. The death occurred in the Gayton District, possibly due to drinking water from an impure source away from home. The case in the Castle Rising District was probably due to the insanitary condition of the home, due to the wilful negligence of the parents. Anti-toxin is supplied free to practitioners in the District.”

*Marshland.*—“Three cases were notified, of which one was very doubtful; Terrington 1, Walpole 1, Emneth 1.”

*Mitford and Launditch.*—“Twenty-one cases were notified; 3 deaths.”

*St. Faith's.*—“Fifteen cases were notified, 10 of these occurred amongst the School children at Haynford; 1 death.”

*Smallburgh.*—“Twenty-three cases notified. The 7 cases at Palling School in Stalham Sub-district were, in my opinion, directly traceable to an unrecognised case of Nasal Diphthera; 7 of the cases at Ludham were in one family.”

*Swaffham.*—“Only 1 case of Diphthera was notified. This also was imported, the patient having come home from a town in Surrey, five days before her illness began. No further cases occurred.”

*Walsingham.*—“This disease again furnished the largest number of notified cases, 66 cases and 14 cases occurring, the parishes most affected being the Field Dalling District, Ryburgh, and Sculthorpe.

“In dealing with these outbreaks a very large number of swabs were taken, and frequent visits made to the Schools affected and the homes of the children. I found it very difficult to enforce efficient isolation, partly because in some houses with large families it was impossible on account of lack of accommodation, and also, as may be readily understood, the difficulty in convincing the rustic parent that a child who has a slight running at the nose or a trivial sore throat that is well in a day or two, is a source of danger to others.

“The mild character of the disease in the majority of the cases, and the early use of Anti-toxin in the more serious, resulted in a low death-rate of only 6 per cent.

“The County Medical Officer of Health visited with me the Field Dalling School in March and September, and Great Ryburgh School in December.

“In no instance was milk or water supply incriminated. In Sculthorpe the cases were mostly of the nasal type and were traceable to a London child who was visiting the village. In the Field Dalling District it was introduced by a family who came to reside in the village of Saxlingham. In Ryburgh an outbreak in December was traced to two nasal cases affecting two classes in the School.

“At the Fulmodestone Schools in December 40 cases of infectious sore throat were noted. Eighteen of them were swabbed—the majority being returned as bacilli of the Hofmann type—but two of them were returned as true Diphtheria.”

This interesting fact reported by Dr. Fisher is evidence in favour of the opinion held by myself and some other bacteriologists that there is a closer connection between Hofmann's bacillus and the Klebs-Löffler bacillus than is generally admitted.

*Wayland.*—“There were 6 cases of Diphtheria. In no case was there a fatal termination. Three cases occurred in one household at Attleborough, all being notified on the same day; there were several other members in the family who received prophylactic injections of anti-toxin, and no further cases resulted. At Watton, one of the School Medical Officers suspected a child at the School to be suffering from the disease. Bacteriological examination of a swab proved positive; I visited the family, and found a younger brother had also contracted the disease. The last case was that of a School teacher in Norwich, who was removed, by permission of the City Medical Officer of Health, to her home in this District by private conveyance. I visited the case, and took a swab from the throat after the patient had apparently recovered, which was found to contain the germs of the disease; later, I took another, which proved negative. This case illustrates the absolute necessity of bacteriological examination before a patient is allowed



to mix with others; had this person done so, without any examination, no doubt others would have been infected."

*Cromer.*—"There were 4 notifications. The first two cases were in children below School age, where no history of infection could be traced. The third was the Matron of a G. F. S. Home of Rest, where previously a girl had been admitted after suffering from a sore throat; and the fourth in a boy who was brought home ill, the diagnosis not having been made before leaving Birmingham.

"In all cases of Diphtheria, swabs for diagnosis and on convalescence have been provided and full advantage taken of bacteriological methods for the control of this disease."

*Downham Market.*—"Only 1 notification, which occurred in a private School where every precaution as to isolation was taken. The Medical Attendant took swabs from all contacts, and discovered among the inmates of the house a girl, apparently healthy, who was an undoubted Diphtheria-carrier, and from whom this case had certainly become infected. The carrier was put under treatment, and no further cases occurred. What might have been a serious epidemic was checked by prompt and energetic action of Dr. Cross."

*Diss.*—"There were 2 notifications with 1 death."

*New Hunstanton.*—"One notification."

*Walsoken.*—"Seven notifications; very mild type."

*Sheringham.*—"One notification."

*Kings Lynn.*—"Ten notifications." The Sanitary Committee have authorised a supply of anti-toxin for those cases which, by reason of poverty, are unable to obtain it for themselves."

## SCARLET FEVER.

*Aylsham.*—"Only six cases occurred with no deaths."

*Blofield.*—"Twelve cases were notified. This is a small number when it is considered that the disease was very prevalent in the City of Norwich, on the borders of the District during the last four months of the year. In most instances I was able to trace the infection to this source.

“The six cases in Thorpe were for the most part independent of each other and did not constitute an epidemic. It should also be noted that in the Parishes of Brundall, South Walsham, and Woodbastwick the infection did not spread beyond the primary case.

“Disinfection by formic aldehyde vapour was carried out by the Inspector at the end of each case.”

*Deprwade.*—“Twelve cases. Shelton, five cases in one locality, the other seven in six parishes, and all widely separated.

“The number of single-case outbreaks is noteworthy, it being unusual to find so many wide-spread sporadic cases at one time.”

*Docking.*—“Fourteen cases. Seven parishes affected. In one case at Burnham Sutton, isolation in the patient's house was impossible. With your Council's consent your Sanitary Inspector hired an empty cottage, furnished it, engaged a caretaker, and the children not affected were moved into it, unfortunately the caretaker was obliged to give up her position and another could not be found, the children had to return before the child was out of quarantine. Fortunately there were no more cases. This is an occasion where the want of an Isolation Hospital is felt.”

*Downham.*—“Twenty-six cases, mostly of a mild type.

“The only cases that call for comment were those occurring at West Dereham, which, together with the cases at Stradsett, amounted to 13. There is little doubt that the disease was introduced by a family who came to stay in the village in April. Some of the members of the family had been suffering from Scarlet Fever, and had been discharged from a fever hospital in London, and were apparently free from infection. The cases at Stradsett, who had been staying in West Dereham, were the first to be notified, and subsequently other children in the village. One of the cases was nursed by her sister, a teacher in the school, who also became very ill, but kept on attending to her sister. This case was a particular sad one. The grandmother was dying in the house, and there was no mother. There was great difficulty in getting any of the neighbours to assist in nursing the invalids. On representing the facts to your Council I was authorised to obtain the services of a nurse. Unfortunately the school teacher died, and the father, who was also taken ill, died shortly afterwards of Erysipelas.

"This was a case where an Isolation Hospital would have been of great service. In the other cases it was possible to obtain a fair degree of isolation, and the epidemic soon abated."

*Erpingham.*—"Fourteen cases of Scarlet Fever occurred. The Glandford and Salhouse cases probably received the infection from contact with children suffering from the disease in the neighbouring District. The great difficulty in dealing with Scarlet Fever arises from the number of unrecognised cases which are never discovered until they are found to be peeling at School.

*Flegg E. and W.*—"There were three notifications.

*Forehoe.*—"There were five notifications. Strict isolation was enjoined and there was no spread of the disease."

*Henstead.*—"Thirty notifications in the District during the year."

*Loddon and Clavering.*—"There were ten cases notified and three of these were imported into the District. In three instances an isolation hospital was badly needed in order to minimise the risk of infection spreading.

*Freebidge Lynn.*—"Seven notifications were received from the Gayton district.

*Marshland.*—"Fifteen cases were notified, compared with 31 in 1910. Thirteen of these cases were in Terrington Sub-District, and were traced to two children returning to the District from places where Scarlet Fever was prevalent.

*St. Faith's.*—"Fourteen cases were notified, 11 of which occurred in St. Faith's."

*Smallburgh.*—"Thirteen cases notified."

"The one case at Hasboro' was contracted from another resident in the same house, who had been attacked when abroad and had been isolated for 9 weeks, but catching cold and getting some glandular enlargement, the infection again became active."

"The 12 cases at Hickling were, I believe, traceable to a mild unrecognised case mixing with the rest of the family, who also had 'sore throats' and conveyed the disease to other children at school."



*Swaffham*.—"There were eight cases of scarlet fever. Two cases were notified during March in one family at Newton-by-Castleacre, and no further cases were reported. In September five cases occurred at Cockley Cley, also all in one family, the mother being the only one who escaped. In this house there were three bedrooms for the accommodation of six members of the family and a lodger, who moved on the first case occurring. It is not surprising that the infection spread to the rest of the household, as of course no isolation of the sick was possible. The only probable source of infection was the presence of a Fair in the neighbourhood shortly before the first case was notified. The last case occurred in Necton; the family had just moved from Essex where no doubt the disease was caught. I notified the Medical Officer of Health of the district in Essex."

*Thetford*.—"There were seven notifications."

*Wayland*.—"Scarlet fever has been very prevalent in the district during nearly the whole year, but mostly in October and November; village after village being affected to a slight extent. I feel confident that the chief cause of the spreading of the infection was the fact that the extremely mild type of the disease resulted in parents not realizing the nature of the complaint, failing to call in medical advice, and allowing, through ignorance, infected children to be at large as usual. There were no deaths from this cause. So many cases of this unusually slight character suggests the possibility that some of them, though showing the ordinary symptoms in a mild form of Scarlet Fever, may really have been due to the complaint known as Dunn's Disease, which, I hear, has been fairly common in more than one district in Norfolk."

"There were, in all, 67 cases notified, nine parishes being affected. There is one point worth noticing, that is, that only one or two houses have been infected, as a rule, in each village; the reason for the large total of cases is the inefficient isolation in each cottage of the first person contracting the disease, resulting frequently in every member of a household falling a victim; thus, at Roudham, there were two families only affected, in one there were three, in the other seven cases; again, at Rockland, there were two families, and at Attleborough, one, with six cases each. Frequently, I received four notifications at the same time from one house. It will be seen, therefore,

that though at first sight this epidemic appears to have been very alarming, in reality it was not so. Many of the cases would have been prevented, had it been possible to secure isolation, in any degree efficient, of the first cases. This, naturally, leads to the question of an Isolation Hospital. Without suggesting that a Fever Hospital is needed for this District alone, I am sure that, as I pointed out in a previous report, if your Council would reserve one or two cottages in different parts of the District, to be occupied by a couple without children, who would keep some rooms ready for immediate use, to which infectious cases could be moved, where efficient isolation was impossible in their homes, it would prevent such a spreading of infectious disease as we have experienced this year.

“Fortunately, Scarlet Fever has been of the mild type I have described, but further visitations may not be, in which case the results may be truly appalling, and our state of unpreparedness to deal with an epidemic would be very patent to all.”

*Cromer.*—“There were five notifications. The first in a woman who had been visiting Norwich. Two children became infected by a child visitor from Norwich. The other two occurred without any definite history.”

*East Dereham.*—“There were six notifications.”

*Downham Market.*—“Only one notification, which was of a very mild type.”

*New Hunstanton.*—“Two notifications.”

*Walsoken.*—“Nine notifications.”

*King's Lynn.*—“Twelve notifications; no deaths.”

## SMALL-POX.

I received notifications of a few persons coming into Norfolk from Port Medical Officers and from Military sources, where such persons had been in indirect contact with Small-pox on board ship or otherwise. In such cases I at once forwarded the particulars to the District Medical Officer of Health into whose district such persons was going, so that immediate enquiry could be made as to the state of vaccination of such persons, and of the household he mixed with, keeping them under observation for a period covering the usual incubation period of Small-pox (about a fortnight).



Happily no cases occurred in the area of the Administrative County of Norfolk in the year 1911, but when cases of Small-pox occurred in Great Yarmouth, 'a contact' was notified to the District Medical Officer of Health as working in the Blofield District. The District Council immediately made preparations for the possible extension of the outbreak into their District. A temporary Isolation Hospital was prepared by Boulton & Paul, of Norwich, which could be erected very quickly, but happily it was not required.

## CEREBRO-SPINAL FEVER AND ACUTE POLIOMYELITIS.

These two diseases are bracketed together because, apart from a bacteriological examination of the cerebro-spinal fluid, they are sometimes likely to be mistaken each for the other—though the balance of evidence is in favour of their being quite distinct affections, due to the invasion of the body by two varieties of micro-organisms.

In the year 1911, several outbreaks of Poliomyelitis occurred in different parts of England, affecting Devon and Cornwall in the South-West, Dorsetshire, the Midlands, and East Anglia.

In the latter part of the year, cases occurring at Stowmarket and adjoining parishes in the neighbouring County of Suffolk put me on the *qui vive*, and I communicated with the district Medical Officers of Health in Norfolk, offering my assistance in case of any suspicious cases occurring in this County.

I had a telephonic message from Dr. McLintock, M.O.H. for Loddon and Clavering, that suspicious cases were under his observation at Chedgrave, near Loddon. It was arranged that Dr. Claridge, Pathologist to the Norfolk and Norwich Hospital should accompany me, and a lumbar puncture resulted in a fluid being obtained from the cerebro-spinal fluid, which, on cultivation, shewed a micro-organism which, in Dr. Claridge's opinion, was the micro-organism associated with Cerebro-spinal Fever. A sister had, however, recently died with unequivocal signs of acute Poliomyelitis. From an epidemiological view point, enquiry elicited the fact that these children had been recently staying in Suffolk in the neighbourhood of Stowmarket,



and it was logical to conclude that they had been infected there. A further case in an adult woman in the Loddon Union had also been in Suffolk, and it was also an ascertained fact in a case I saw with Dr. Robinson, of Harleston, M.O.H. for the Depwade Rural District, that there had been direct contact with a relative living within the infected area in Suffolk.

Later an outbreak occurred in the Downham Rural District, where I saw several cases with Dr. Cross, the District M.O.H. These appeared to be due to a direct spread from a centre of infection in Littleport in the Isle of Ely.

A case occurred in West Runton, in the Erpingham Rural District, which came to my knowledge only after death. In company with the late Dr. Richardson, enquiries were made which showed that the girl had come into contact with several visitors from various parts.

In Wendling and Yaxham, in Mitford and Launditch, some five or six cases had occurred in the course of nine months before attention was attracted to the disease. These were not notified, but were kindly brought to my notice by Dr. Howlett, of Dereham.

A memorandum on acute Poliomyelitis was issued by the Local Government Board, and circulated to Sanitary Authorities in December, 1911, and this year, 1912, this disease, as well as Cerebro-spinal Fever, have been made compulsorily notifiable.

It is to be hoped that should any further cases arise, measures will be taken on notification forthwith, towards checking the ravages of these particularly cruel diseases. The Sanitary Authority in whose area a case may arise will be responsible for affording facilities for the examination by a competent bacteriologist of material derived from the sick, and should also be prepared to give isolation accommodation.

It is a lamentable fact that over half the patients who survive an attack of Poliomyelitis are crippled for life.

Special Reports on the outbreaks in the Downham and Loddon and Clavering Districts were made by the respective Medical Officers of Health, and from the Annual Reports we learn that the following cases were noted :—

District.	No. of Cases noted,		No. of Deaths.	
Depwade R.D.	..	1	..	—
Downham	..	10	..	2
Loddon and Clavering	..	3	..	1
Erpingham	..	2	..	1
Smallburgh	..	1	..	1
Hunstanton	..	2	..	—
Walsingham	..	—	..	1

Dr. McLintock remarks:—"If only there had been a County Bacteriological Laboratory one might have obtained very much valuable information as to this and other diseases."

Dr. Cross wrote a full Special Report, which was also published in one of the Medical Journals. He divided the cases into three groups of four cases, two cases, and four cases in Southery Ferry, Crimplesham, and Barroway Drove, and says:—"There seems to have been no connection between the three groups, but there is distinct evidence of contact in several of the cases." House flies might account as "carriers" where there is no other evidence of contact, and "flies and other insects were abundant." Eight of the ten cases were under three years of age.

I quote the following from my Quarterly Report to the County Council in December, 1911:—

"As regards preventive measures (whatever may be the exact nature of the infective agent in Poliomyelitis or in Cerebro-Spinal Meningitis), contamination or contagion appears to be affected by means of the mouth and nose of a sufferer or of a 'carrier.' The affection of the mouth and nose may be slight and hardly noticeable, and the brain and spinal cord may not become infected in such persons, who may appear to be suffering from only a slight cold, and who may become the cause of well-marked attacks in others, and who are therefore called 'carriers' of infection.

"Investigations on a considerable scale elsewhere have shown that during the height of an epidemic of Cerebro-Spinal Fever a considerable percentage of persons may be 'carriers' of the meningo-coccus, and that this percentage may be as high as 50% among members of families in which cases of Cerebro-Spinal Fever have occurred.

“I believe a similar condition applies to Poliomyelitis, though bacteriological proof is not forthcoming owing to the general opinion that the causal organism cannot be recognised by the microscope. Had I a bacteriological laboratory at my disposal I would put to the test certain views I have, in the hope of elucidating this point, but at present there is no proof as regards Poliomyelitis, although a coccus is accepted as regards Cerebro-Spinal Fever.

“At any rate, as a practical and responsible adviser in the domain of preventive medicine, I advise the same procedure for contacts of cases of Poliomyelitis as is advised for Cerebro-Spinal Fever. Every person (including the Doctor) who comes in contact with a case of either disease should take certain precautions in the way of using antiseptic gargles, and by antiseptic douching or spraying of the nose, or by sniffing up vapour from a heated antiseptic solution. Pocket handkerchiefs and bed-linen should be treated cautiously and boiled, and fumigation of room, blankets, etc., may be carried out as with common infectious diseases.”

#### ERYSIPELAS.

There were only 48 notifications in 1911, 35 notifications involving nine Rural Districts and 13 notifications in three Urban Districts.

In Smallburgh it is recorded that sanitary defects were found at the residence of six notified cases.

I have in former Reports drawn attention to the curve incidence connection between Erysipelas and Scarlet Fever. The cases reported by Dr. Cross, under Scarlet Fever, at Stradsett, excite attention from this point of view.

#### MEASLES.

The method of notification of cases of Measles by School teachers, which, as School Medical Officer, I introduced two or three years ago, has proved of great value, particularly when the instructions as to notification of the first case known of at the earliest possible moment have been faithfully adhered to. The notification is made in duplicate at the same time to the District Medical Officer of Health as well as to the School Medical Officer, so that if joint action is desirable arrangements can at once be made for this. In practice it has been found most advantageous for the School



Medical Officer to take administrative action, provided there is no doubt as to the case being a genuine case of Measles. This is rendered possible by the use of a Measles Register, which on my initiative has been introduced into every School in the County, and which the Head Teacher is instructed to keep up to date in respect of the Measles history of every child in the School. On notification this Register is asked for by the School Medical Officer, and from his knowledge of the natural history of Measles he can advise as to whether exclusion only of certain children is required, or whether class closure or closure of the whole School is desirable. The process approaches to scientific precision, but of course each case must be considered by the School Medical Officer himself, and cannot be delegated as a matter of routine to a clerk. Naturally, therefore, in a large County with between 500 and 600 School departments the work is often a heavy tax on the time of the County Medical Officer.

The method of School Notification of Measles proved so successful when I was Medical Officer of Health in a large Borough, that I was able to demonstrate by a curve how I always had the disease in hand as compared to its unhindered ravages every second year previously to the method being put in force.

Several of the District Medical Officers of Health make a complimentary allusion to the working of the method, and Dr. Linnell, Medical Officer of Health for Sheringham, in consequence of this more satisfactory method bringing earlier information, and enabling earlier preventive measures to be adopted, advises his Council that he thinks that it would be expedient to drop the notification of Measles at present in force in Sheringham.

I cordially commend this altruistic advice on the part of the Medical Officer of Health, as it will relieve the District Council of an annual average payment of £10, but it should not be forgotten the Medical Officer of Health and his Colleagues will be losers to that extent, and I trust their public-spirited action will be remembered should the question of increased remuneration be at any time raised.

In the *Aylsham* District, Measles was epidemic in Aylsham, Buxton, Brampton, and Coltishall, and it was found necessary to close the Schools in those Parishes for short periods.

The M.O.H. for *Blofield* reports:—"Measles, as well as other minor infectious diseases, have now become practically notifiable diseases through the system introduced by the School Medical Officer, which ensures District Medical Officers of Health having prompt information of all infectious illness occurring among children attending Elementary Schools." I am therefore able to report that, with the exception of one or two cases, in Thorpe, at the beginning of the year, and a very limited outbreak in Acle in December, this disease did not make its appearance in the District.

In *Depwade*, notifications of Measles were received from the Parishes of Hempnall and Shelton and Hardwick.

In *Marshland*, Measles was prevalent over the whole District, but no fatal cases occurred.

In *St. Faith's*, one death occurred.

In *Downham Market* a few mild cases of Measles occurred towards the end of July.

In *New Hunstanton* only two notifications were received.

In *Walsoken* "this disease became widely distributed and epidemic in the late Summer months, and a large number of children were affected, but fortunately it was not of a severe type. We have, however, to note that three deaths were directly due to this disease."

In *Sheringham* two notifications were made.

In *King's Lynn* there were a few cases with one death, but this disease was not nearly so prevalent as in 1910.

#### PUERPERAL FEVER.

Only one case was notified in Depwade, which proved fatal.

#### WHOOPING COUGH.

As I have previously pointed out, this distressingly uncomfortable infectious disease is one of high fatality among infants under 2 years of age. Children of school age, fortunately, generally recover.

In 1911 Whooping Cough was responsible for 45 deaths in Norfolk, all being children under five years of age.

When this disease is notified from a school, pamphlets of advice are issued, as well as in the case of other infectious diseases. These help to diffuse the necessary knowledge for preventing the heavy incidence of such



infectious diseases and the heavy mortality they give rise to among young children.

It is this disease more than any other which leads to long exclusion of many children from school. Exclusion of contacts is dealt with on much the same lines as for measles—that is, all members of an infected family under seven years of age, and such older children as have not previously had the disease.

This disease (as indeed all infectious diseases, and probably many other diseases) is best dealt with on open-air methods, with due precautions against chill, and against exposure in public places. It is a regrettable and serious fact that children suffering from this disease are often taken into unventilated railway carriages, trams, etc., freely infecting other susceptible children. This should be a punishable offence.

The following allusions are made in the District Reports to Whooping Cough :—

*Aylsham*.—"Whooping cough was prevalent in Aylsham in March and April, and there were a few cases in Erpingham in May. During July and August cases were reported from Banningham, Barningham and Colby. The disease was very prevalent during the Autumn among the younger children in Hackford and Whitwell, necessitating the closure of the infants' department of the school for some weeks."

*Blofield*.—"Except for a few cases among the children at Reedham School during February, March, April and May, whooping cough was absent from the district."

*Depwade*.—"Notifications of whooping cough were received from the parishes of Needham, Carleton Rode, Pulham Mary, Tasburgh, Hapton, Shelton and Hardwick, and Earsham."

*Marshland*.—"Whooping cough was very prevalent over the whole district, but no fatal cases occurred."

*Mitford and Launditch*.—"There were five deaths from whooping cough."

*Swaffham*.—"There was one death from whooping cough. I trust that the parents are beginning to realize that this disease is not to be treated in the cheerful light-hearted manner as heretofore."



*Wayland.*—"This disease has been very prevalent in the District, but I am glad to be able to record not more than three deaths. A leaflet has been distributed, and will lead, I trust, to good results in the future."

*Walsoken.*—"As is so common, this affection was found a frequent accompanying disease with measles; or arising soon after its disappearance—in many cases the attack was severe, spreading throughout the District, and I regret I have to record seven deaths due to this disease."

*King's Lynn.*—"There have been a number of cases but no deaths."

## TUBERCULOSIS.

In my Annual Reports I have each year commented on this form of disease, so rife in this and other European countries. In England alone, nearly a thousand deaths occur every week from Pulmonary Tuberculosis or "Consumption." In Norfolk the deaths average at least five every week. What should we think if any other disease whose bacterial origin is known were to cause regularly five deaths a week in this County? We should say our Sanitary Authorities were grossly failing in their duty to stamp out a very serious epidemic. To those of us who have for years past drawn attention to the dreadful death tribute levied on our population annually by Tuberculosis, exceeding that resulting from all the other infectious diseases added together, in such a formidable list as Scarlet Fever, Diphtheria, Typhoid Fever, Measles and Whooping Cough, it is a matter of great importance that the year 1911, ushered in the means of bringing us within striking distance of this great enemy of our race.

The essential cause of Tuberculosis—the tubercle bacillus—has been known since the year 1882, but we are only now, a generation later, commencing to take effective co-ordinated action to oust this devouring ogre of Consumption from its tyrannical position.

It is noteworthy that in the very year that we have begun to take concerted action against Tuberculosis, the man to whose sagacity and monumental work we owe the discovery of the tubercle bacillus, and of tuberculin (its own products to be utilised as one of the chief agents in freeing the human race from its ravages) breathed his last—just when his transcendent labours were about to come to fruition.

The year 1911 will mark an epoch because during that year, regulations were made providing for the Compulsory Notification of Pulmonary Tuberculosis, and the National Health Insurance Act was passed, providing funds and machinery for effectively tackling the problem of the eradication of Consumption.

Tuberculosis is essentially a public health problem and cannot be divorced from public health administration. For years past thoughtful Medical Officers of Health have kept themselves in touch with advancing knowledge in connection with this disease, and especially in its bacteriological bearings. So important a part does bacteriology play in public health work, a practical knowledge of bacteriological methods has for years past been required of all candidates for the Diploma in Public Health, whose theoretical knowledge is tested by papers and oral examinations, and whose practical skill and ability are tested practically in the laboratory in various directions.

In the year 1906, I commented (*see* Annual Report on the Health of the Borough of Southend-on-Sea, 1906, page 41), in connection with Tuberculous Diseases, that "as to the future campaign against Tuberculosis, it seems that a carefully co-ordinated plan of action should be uniform throughout the country." After detailing the necessary factors requiring harmonious co-ordination, I ventured to write in connection with the first requirement, viz., the compulsory notification of Phthisis, as follows:—"Objections of one kind and another are raised to compulsory notification, but they are all stale, and were urged 20 years ago against the compulsory notification of such diseases as Scarlet Fever and Diphtheria. Most assuredly they will not stem the tide of compulsory notification, which will undoubtedly come. Then the difficulties and objections raised will be found to be without basis, and will vanish like the early dew as before; and the bogeys that now disturb the minds of some members of the profession, as well as the public, will be finally laid."

Now, in 1912, Compulsory Notification of Pulmonary Tuberculosis has become an established fact, the profession and public being gradually prepared for it through the Local Government Board having first required the notification of Poor-Law cases in 1908, and of hospital cases in March, 1911. This was followed by the order of November, 1911, making Pulmonary Tuberculosis compulsorily notifiable as from January 1st, 1912.



These Tuberculosis Regulations issued by the Local Government Board lay definite duties and responsibilities on local Sanitary Authorities and their Medical Officers of Health to take steps to prevent the spread of infection, and remove conditions favourable to infection. Indeed, these Regulations give powers to Sanitary Authorities, and them alone, for taking adequate measures in connection with Tuberculosis.

It is most essential that this fact should not be lost sight of when considering the provisions of the National Health Insurance Act, 1911, and suggesting any scheme for purposes of economy and efficiency to embrace the whole County.

This being the case, I suggested to the County Public Health and Housing Committee in March, 1912, that it might be advisable to hold a Conference with the District Sanitary Authorities. The Committee authorised me to hold a preliminary Conference with the District Medical Officers of Health, without in any way committing the County Council.

This Conference was held at the Shirehall on March 15th, 1912, and the Medical Officers of fifteen Districts attended. I prefaced my remarks by stating that any proposals or suggestions I might make had not yet been before the County Council.

I then briefly outlined a complete Scheme for dealing with Tuberculosis, stating my opinion that the amount of grant from Imperial sources would in some measure depend upon the completeness and efficiency of the Scheme. The Scheme comprised—(1) Compulsory Notification; (2) Registration of Tuberculous Cases and Homes; (3) Following up cases and contacts at their homes by Doctors and Health Visitors; (4) Possibly the establishing of Tuberculosis Dispensaries, to act as centres for information, supervision, and sorting out for the various forms of treatment; (5) Provision of Sanatorium treatment for suitable early cases; (6) Provision of appliances, sputum flasks, paper handkerchiefs, etc.; (7) Provision of Shelters for home-treated cases; (8) Provision of Hospital Isolation for advanced cases; (9) Co-ordination of the work of District Medical Officers of Health, School Medical Officer, School Medical Inspectors, Nurses, and Health Visitors; (10) Educative measures by Pamphlets, by Classes in Hygiene for Teachers and Scholars, Tuberculosis Exhibitions, etc.



In the discussion which followed, a few Medical Officers thought their powers under the Regulations would be greatly curtailed by Article XIII. of the Regulations, but this would only apply if enactments were put in force on the ground of a patient suffering from Pulmonary Tuberculosis. Obviously overcrowding could be dealt with without any reference to Tuberculosis. A suggestion was made that the financial part of the Scheme could be run on the same lines as the County Asylum in regard to contributions from the constituent Sanitary Authorities.

After further discussion, a non-committal resolution was carried, the District Medical Officers of Health agreeing to submit the matter to the careful consideration of their respective Authorities, and to suggest that they should appoint delegates to a Committee of all the Authorities to formulate a definite Scheme.

The Local Government Board have desired that a Report should be made by the County Medical Officer of Health setting out the existing means for the treatment of Tuberculosis within the County, and this would, therefore, be an appropriate place for quoting the following extracts from the reports of the District Medical Officers of Health on the subject of Tuberculosis.

#### *RURAL DISTRICTS.*

*Aylsham.*—"Fourteen deaths registered as due to Pulmonary Phthisis, 11 as due to other forms of tubercular disease.

"During the year six cases were notified under the Public Health (Tuberculosis) Regulations, 1908, and one case under the Public Health (Tuberculosis in Hospitals) Regulations, 1911. The action taken includes the supply of Jeyes' Fluid, spitting cups, a card of instructions, and, in the event of death, the disinfection of the room occupied by the patient.

"Pulmonary Phthisis becomes compulsorily notifiable by medical practitioners, whether the case occurs in their public or private practice, under the Public Health (Tuberculosis) Regulations, 1911, and very full powers are granted to Rural District Councils to make provision for the prevention of the spread of consumption. They include measures for the detection of the disease in its early stages, the treatment of the patient in a

Sanatorium or at home, and generally for the provision of anything and everything that can possibly help in reducing the mortality from this, the most formidable preventible disease of modern times. The Sanitary Committee, acting on my advice, have already made arrangements with Dr. Claridge for the free bacteriological examination of sputum sent to him by medical men practising in the District who may be in doubt as to the diagnosis of cases in the early stage." After alluding to the provisions which will be made under the National Health Insurance and Finance Acts, 1911, Dr. Back continues—"There will, however, still remain in your District cases of consumption unprovided for which will need your help. It is possible that in the course of the current year, some combined scheme for the County, in which the District may share, will be evolved. In the meantime much useful information will be collected, and from the classification of the cases notified it will be possible to form an opinion as to the requirements of the District for Sanatorium accommodation."

*Blofield.*—"Under the Public Health (Tuberculosis) Regulations, 1908, I have received no notification, and under the Public Health (Tuberculosis in Hospitals) Regulations, 1911, I have only received one notification. From this it is obvious that these two regulations afforded little or no opportunity for dealing with the important question of consumption."

"With the commencement of the current year (1912) under the Public Health (Tuberculosis) Regulations, 1911, notification of all cases of consumption becomes compulsory. The registration is however but a means to an end, and very full powers are given to District Councils under Article IX. of the Regulations to provide means for the early diagnosis of the disease, for the prevention of the spread of infection, and for the supply of medical and other assistance to patients."

"Acting on my advice the Council have very wisely taken a first step by making provision for the early detection of the disease and have granted medical men practising in the District the privilege of obtaining free bacteriological examinations of sputum."

*Deprwade.*—"Judging from tables of mortality, your district appears to be less troubled with Phthisis than the average. In 1911, four deaths were recorded."

*Docking.*—"Two cases were notified under the 1908 regulations, one was removed to the Workhouse, the other was provided with sanitary spittoon and disinfectants, no separate sleeping apartment was available. Any poor person (on request of the doctor attending) is provided with disinfectants and spittoon. All notified deaths from Phthisis are enquired into and the Sanitary Inspector carries out if desired the necessary disinfection."

*Downham.*—"Under the Public Health (Tuberculosis) Regulations Act, 1908, only three notifications were received. This does not represent the actual number of poor persons so suffering, since I believe several cases were not notified. In future all cases of Tuberculosis are notifiable."

"Of the three cases, one was notified by the Relieving Officer for the Downham district. This case came from Dr. Barnardo's Home, and was shortly afterwards removed from the district, and the bedroom used was disinfected by the Inspector."

"There is no sanatorium in the district. In the County there is only one, and it is difficult to obtain admission. It appears that there is great reluctance to admit any but the very early cases into any sanatorium, and, as a rule, cases are generally in an advanced stage of consumption before attention is drawn to their condition."

*Erpingham.*—"Three cases of Pulmonary Tuberculosis notified under the compulsory notification of poor persons."

"Fifteen deaths as compared with 15 in 1910 and 19 in 1909. Thirteen were caused by Phthisis or Pulmonary Tuberculosis and two from other forms of Tuberculosis."

*East and West Flegg.*—"Two deaths from Pulmonary Tuberculosis, one death from Tuberculous Meningitis."

*Forehoe.*—"Five cases of Phthisis notified."

"Six deaths occurred from Phthisis and five from Tuberculous Meningitis."

The District Council provides accommodation for cases, either early, intermediate or advanced, at the Workhouse—one ward with four beds. The Council has also provided three portable shelters."

*Henstead.*—"Eight deaths due to tubercular diseases (seven Phthisis)."



*Loddon and Clavering.*—"Six poor persons notified, of whom two died. Eleven deaths as compared with nine in 1910, giving a rate of .876 per 1000 of the population."

*West Lynn.*—"No deaths."

*Freebridge Lynn.*—"Two notifications received—one under 1908 and one under 1911 Regulations

"Total number of deaths from Pulmonary Tuberculosis registered was 11, an increase of two compared with 1910."

*Marshland.*—"Two cases were notified (one of these was invalided from the Navy but subsequently enlisted in the Army). Eight deaths occurred, including two transferred from other Districts."

*Mitford and Launditch.*—"Sixteen deaths occurred from Phthisis, four from Tuberculous Meningitis, and two from other tuberculous diseases.

"I hope to see co-operation between the different Councils of the County and the Insurance Committee, to provide suitable provision for all cases, for it must not be forgotten that a large number will have to be provided for by the local authorities who are not insured persons."

*St. Faith's.*—"Six deaths occurred from Phthisis, and one from other tuberculous diseases."

*Smallburgh.*—"Though 12 people died of this disease during the year, only six cases were notified to me, and those all in the North Walsham District.

"Notification is now compulsory, and I hope each year will see a diminishing number of deaths from this disease, but until there are better means for treating early cases elsewhere than in their often overcrowded homes, the improvement must be slow."

*Swaffham.*—"Three cases of Pulmonary Tuberculosis notified under "Public Health (Tuberculosis) Regulations, 1908." Each case was visited by the Inspector of Nuisances who examined the premises. In one case, the patient was one of seven, consisting of two families occupying two bedrooms and one living room, the windows of the latter not being made to open. Steps were at once taken to remedy this state of overcrowding; the difficulty of finding accommodation for one family was very great.

“There were six deaths from Pulmonary Tuberculosis. Leaflets containing suitable instruction were distributed to all known cases.

“An Order issued by the Local Government Board making Pulmonary Tuberculosis compulsorily notifiable came into force on January 1st, 1912. A card has also been supplied containing instruction and information about the disease. This card is to be given by the Inspector to each patient after notification.

“It will be seen that this year an additional Statistical Table has been issued in which information as to the treatment of Consumption in the District is required, that is Sanatoria and Hospital accommodation. In this District we have none. Some time ago I suggested that the Joint Small-pox Isolation Hospital should be used as a Fever Hospital, which apparently was not possible. Would it be possible to use it for the treatment of Pulmonary Tuberculosis in the early stages where patients could be treated for a time and educated in proper hygienic methods to be carried out after their return home?

*Thetford*.—“Eight deaths were due to Phthisis.”

*Walsingham*.—“Pulmonary Phthisis death-rate, 0·86; all tubercular diseases, 1·08.”

*Wayland*.—Three cases are notified under “The Public Health (Tuberculosis) Regulations, 1908.” Each case was visited, and the family warned of the infectious nature of the complaint. There were 13 deaths from Pulmonary Tuberculosis, the infected rooms being disinfected afterwards. The new Tuberculosis Regulations came into force on January 1st, 1912. A certain amount of benefit will result immediately, by making relatives appreciate the infectious nature of the disease, and causing them and the patient to use greater care in their habits; but the real benefit will be when Sanatoria, Dispensaries, and Shelters are available for the treatment and education of persons in curing themselves. I hope that some scheme will shortly be organised to this end by the County Medical Officer of Health.”

*Cromer*.—“Two deaths occurred from Pulmonary Tuberculosis.”

*East Dereham.*—"Two cases of sputum were examined, and in one tubercle bacilli were found. There is no organised system of dealing with Tuberculosis, and it is difficult to see how it can be dealt with in such a small district.

"There were three deaths from Phthisis and one from other Tuberculous disease."

*Diss.*—One death occurred from Phthisis, one from Tuberculous Meningitis, and two from other Tuberculous diseases.

*Downham Market.*—"There were no notifications of Pulmonary Tuberculosis among paupers. This disease now becomes for all classes compulsorily notifiable to the Medical Officer of Health, but with special regulations attached, whereby the sufferer is liable to no disabilities, and the notification is to be treated in an entirely confidential manner by the Medical Officer of Health. The new Act empowers local Sanitary Authorities to give practical help to cases of Pulmonary Phthisis, and at the same time, of course, puts a responsibility upon them to do so. It would, therefore, be well for your Council to consider what steps should be taken in endeavouring to procure Sanatorium treatment for such cases as really require it. It would probably be much cheaper to make arrangements for helping suitable cases to an existing Sanatorium than to have to bear a considerable share in the erection of a local one. By no means every case of Pulmonary Phthisis is suitable for a Sanatorium, or would derive the least benefit from this kind of treatment, which ought to be regarded largely as an educative treatment for very early cases, teaching them how to combat the disease for themselves, and how to prevent infecting their neighbours. Your Council could only consider each case on its merits, and be prepared to give the form of help most required."

*New Hunstanton.*—"Four deaths from Phthisis (all visitors)."

*Sheringham.*—"There were two deaths attributable to tubercular disease; one certified as due to Pulmonary Tuberculosis, and one due to Tubercular Meningitis.

"Pulmonary Tuberculosis became notifiable on Jan. 1st, 1912, under an Order of the Local Government Board.



“The power given to Councils to provide medical and other assistance is notable, and is capable of a wide interpretation.

“The Officer which it is empowered to appoint apparently refers to a Health Visitor, whose duty it would be to visit the notified cases, and in a tactful manner, to educate them in treatment of their complaint in accordance with the instructions of a medical man, while anything necessary or desirable for preventing the spread of infection, and for removing conditions favourable to infection would be gradually and unobtrusively insisted upon or provided.”

*Swaffham*.—One case has been reported under the Notification Act.

*North Walsham*.—“No cases of Pulmonary Phthisis were notified during the year.”

*Walsoken*.—“There were no notifications in respect to Phthisis this year.”

*Wells*.—“There were no deaths, belonging to this district, from Pulmonary Tuberculosis during the year; a most satisfactory and unusual record. One imported case was certified.”

*King's Lynn*.—“There have been during the year 18 cases of Pulmonary Tuberculosis notified and two from other forms of this disease.”

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Although the following should strictly appear in my next Annual Report (for 1912), the unusually late issue of the present Report (for 1911) justifies its inclusion here.

The financial and other considerations involved in connection with a County Scheme for dealing with Tuberculosis have been so indefinite that the County Council have been very cautious not to proceed with undue haste, and I myself, as County Medical Officer, realise the importance of “*Festina lente*” when endeavouring to apply to a thinly-populated area the principles inculcated in the Departmental Committee's Report.

## COMMENTS BY THE COUNTY MEDICAL OFFICER OF HEALTH.

Any scheme for dealing with Tuberculosis in a thorough manner, with due regard for economy and efficiency, must make provision for the whole population concerned; for those uninsured under the National Health Insurance Act as well as for the insured. It is for this reason that a scheme should be evolved by the County Council, as the supervising Sanitary Authority of the County, to provide treatment which may be utilised by—

- (a) The Insurance Committee for *insured* persons.
- (b) The various District Sanitary Authorities who are empowered by the Tuberculosis Regulations to give practical help, and whose responsibilities in this connection must be emphasised and recognised.
- (c) The County Council itself as the *Education Authority* for children found tuberculous, and possibly by
- (d) The Local Boards of Guardians as Poor Law Authorities.

(The temporary arrangement by which the County Medical Officer advises the Insurance Committee as to the steps which can be taken to ensure Sanatorium benefit to *insured* persons for the first six months comes entirely within the province of that Committee, and need not be discussed further here.)

As regards the District Sanitary Authorities, they are already concerned in respect of the prevention and cure of Phthisis since compulsory notification came into force on January 1st, 1912. Their powers enable them to offer Sanatorium treatment, and to provide or contract for the use of Dispensaries and Hospitals. They may supply all such medical and other assistance, and all such facilities and articles as may reasonably be required for the detection of Pulmonary Tuberculosis, and for preventing the spread of infection, and for that purpose may appoint such Officers, do such acts, and make such arrangements as may be necessary. Further, they may take a part in educative measures by means of pamphlets, etc., but in a sparsely populated County like Norfolk proper measures can be economically effected only by a combination of Districts—in other words, by a County scheme to which each District Sanitary Authority can contribute.

The Local Boards of Guardians already provide treatment for the necessitous poor.

The Education Authority, through their School Medical Officer, have to notify cases of Pulmonary Tuberculosis found among School children to the District Medical Officers of Health. They may also undertake treatment under the Education (Ad. Prov.) Act, 1907.

The County Council as the Education Authority would therefore share in the requirements of a complete scheme.

It would appear to be advisable during the period while temporary arrangements are in force that the County Council should carefully consider the whole matter, and as a first step should in conjunction with the Insurance Committee determine Dispensary areas.

In the event of an agreement being arrived at, temporary arrangements should be made at a minimum expenditure to start work in these Dispensary areas. It would then be possible to record to what extent the Dispensaries were used by insured and by non-insured persons, classifying the latter according to their ability to pay for medical treatment. Record could also be kept of the number recommended for the various forms of treatment—domiciliary, sanatorium, dispensary, or hospital.

In the meantime conferences could be held with District Sanitary Authorities, and enquiries made as to whether Boards of Guardians would be prepared to make any use of the Dispensaries, also communications with Hospitals and other Authorities as to provision of beds or contract for dispensary treatment.

#### IMPORTANT POINTS FOR CONSIDERATION.

*Tuberculosis* is a decreasing disease.

The corrected death rate from all forms of Tuberculosis has in round figures decreased in England and Wales from over 3,500 per million living in 1851-55 to 1,600 per million living in 1906-10. [In 1910, the figure was 1,434 per million living.]

The Pulmonary form, or Phthisis, has decreased in the same time from 2,800 to 1,200.

In other words, the Phthisis mortality has fallen during the past 50 years by nearly 60 per cent. at all ages.



In Norfolk the crude death rates per million living in 1910 were among

	Pulmonary Tuberculosis.	Phthisis not otherwise defined.	Tuberculous Meningitis.	Tuberculous Peritonitis.	All other Tuberculous Diseases.
MALES—					
Norfolk	472	460	102	98	170
Eng. & Wales	693	493	167	105 plus 24 Tabes Mesenterica	162
FEMALES—					
Norfolk	456	389	143	83 plus 8 T.M.	87
Eng. & Wales	476	379	140	94 plus 20 T.M.	128

The above figures indicate that in Norfolk the prevalence of Tuberculosis among males is considerably below that for England and Wales in the proportion of 13 to 16, but among females the prevalence is approximate more to the average of England and Wales, the proportion being as 11 is to 12. This sexual discrepancy would lead one to enquire whether housing conditions are not in some measure responsible for this, since females spend more time in houses, and are also generally in closer relation with sick persons in a house than are males. Generally speaking, the prevalence in Norfolk is relatively low and, such as it is, is decreasing.

Agriculture, the chief and only important industry, is one which suffers less from Phthisis than any other.

I think the provision of Sanatorium beds on the basis of one per 5000 of population would probably be in excess of our requirements, and I advise cautious procedure here.

#### AS TO DISPENSARY ARRANGEMENTS.

In populous places like Norwich, Yarmouth, and King's Lynn, the formation of Tuberculosis Dispensaries will be essential.

In the two former centres, which are independent County Boroughs, the Town Councils will no doubt establish main Tuberculosis Dispensaries, and it might be advisable for the Public Health Committee and the Insurance Committee to get in touch with the Norwich and Yarmouth Authorities to

discuss how far the Tuberculosis Dispensaries which will be founded by them may be available for certain cases in the area of the Administrative County in the neighbourhood of these Towns. Also as to combination for the provision of Hospital beds.

As regards King's Lynn, this Borough being a constituent part of the Administrative County, the Dispensary that will need to be established there would be a Tuberculosis Dispensary wholly in the area of the Administrative County.

In other of the smaller Urban Districts, small sub-centres may possibly be required—but these need not consist of more than two rooms in a cottage—where patients in the early stage of Phthisis may be seen. Even at Lynn a small house would probably meet all requirements as regards accommodation. The essential element, it is as well to repeat, is the Tuberculosis Medical Officer; and, in a sparsely populated County like Norfolk, domiciliary treatment with the aid of Shelters should be pre-eminent in combination with Tuberculin.

The Local Government Board and the Insurance Committee agree with the Departmental Committee that in formulating a complete scheme the County Council should consult with the Sanitary Authorities in the County and the Insurance Committees interested.

The first matter to be decided upon would be the Dispensary areas. From my knowledge of the known prevalence of Tuberculosis I can of course give guidance and advice in this matter.

The Departmental Committee recommend that Tuberculosis Medical Officers be appointed by County Councils to devote their whole time to their official duties, in which they will be quite independent on the clinical side, but otherwise to work under the administrative control of the County Medical Officer of Health, in order to avoid redundancies and friction; and to reside in such places in the Administrative County as they may be required. Their duties at first will be concentrated on Tuberculosis problems. Candidates to have held Hospital appointments and to be specially experienced in the diagnosis and treatment of Tuberculosis and in the use of Tuberculin.

The Departmental Committee recommend that a salary of £500 should be offered in order to secure a properly experienced and efficient Medical Officer, and that travelling expenses should also be provided.

As regards Sanatorium accommodation, probably a sufficient number of beds for the needs of the Eastern and Central parts, and possibly for the whole of the County, can be procured by contract with the Governing Body of Kelling Sanatorium; but the Authorities of King's Lynn and the Rural Districts in the Western part of the County are anxious to have a Sanatorium situated in the neighbourhood of King's Lynn.

After due consideration of all the facts and circumstances it might be thought that a small Sanatorium of about 24 to 30 beds might be advisable for West Norfolk, the constituent Sanitary Authorities of the West to bear a proportionate part of the expense of the provision of such a Sanatorium, according to their requirements; but the multiplication of Sanatoria is undesirable, and a small Sanatorium could not support a resident Medical Officer. Also it would be a matter for enquiry whether a grant would be obtained from Imperial sources towards the establishment of such a small Institution. I understand that an admirable site with a good Water Supply can be obtained at a moderate price within four miles of King's Lynn, and the Sanatorium could be placed under the medical superintendence of one of the physicians practising in Lynn who could when necessary consult with the Tuberculosis Medical Officer in difficult or exceptional cases.

I am strongly averse to an expensive building, and think all requirements could be met by the erection of wood, or wood and iron pavilions, or at the most, reinforced concrete on the Kahn System as at the Sanatorium at the Claydon Workhouse (Yorks.) which, it is claimed, did not cost more than £50 a bed apart from cost of site and administration. Generally, one of the chief items of expense is the value of land—but the site I have indicated as suitable, can, I understand, be obtained at £10 per acre. Further, a good and constant Water Supply will be readily available, so that the only additional items of initial expense of any moment would be the drainage arrangements, and the provision of an administrative building for the nurses, etc.

An alternative would be to procure a house standing in some acres of land, the house serving as an administrative building, and chalets or other inexpensive wood pavilions for the Sanatorium patients erected on the surrounding site. This would meet all requirements, and I, therefore, cannot



advise for Tuberculosis alone the erection of any expensive Sanatoria costing £150 per bed. When, however, it is borne in mind that in the future other diseases will be included under Sanatorium benefit the matter requires careful consideration.

As regards advanced cases, hospital provision will be necessary for some of these, and I think more advantage should be taken of existing workhouse accommodation for those eligible for Poor-Law assistance. A separate pavilion on the Sanatorium site will probably be required for some of these cases.

On the whole, as I have already premised, domiciliary treatment will, I think, necessarily be predominant in Norfolk, and since District Sanitary Authorities as well as the County Council would have power to provide Shelters, there should be little or no difficulty in securing open-air treatment for the majority of patients requiring it without much expenditure.

The main object of such Sanatorium accommodation as may be provided should be to educate the patients as to the proper means to adopt to assist their own cure and to prevent the infection of their relatives. For this a six weeks' stay in many cases would be sufficient. In this way some five or six patients per bed could derive benefit annually from the Sanatorium residence.

Twenty beds at Kelling and 20 beds at a Sanatorium near Lynn would thus prove of benefit to about 200 patients a year, and it is doubtful if more than this number would desire to go to a Sanatorium unless compulsory powers of removal are ultimately applied for.

It is very important that Consumptive patients should not acquire lazy habits at a Sanatorium, and therefore a working colony should be established in connection with a Sanatorium. This is already provided for at Kelling, and should be an essential part of any new Sanatorium.

In formulating a Scheme for Tuberculosis the first essential is to set out as far as is known its existing prevalence in the County and the existing means for its treatment.

### (a) EXISTING PREVALENCE.

The Reports of the Registrar General for the years 1908 and 1909 indicate that in these two years 1286 deaths occurred from Tuberculous diseases in the Registration County of Norfolk. This includes the deaths in Norwich and Great Yarmouth, which are in the Registration County of Norfolk.

Abstracting shows that the average yearly deaths were apportioned as follows:—

	Norwich.	Yarmouth.	Remainder of Reg. County of Norfolk.
477 { Deaths from Pulmonary Tuberc.	57	36	112
Deaths from Phthisis (not other- wise defined) ..	76	22	174
	—	—	—
	133	58	286
166 { Deaths from other forms of Tuberculosis ..	60	28	78
	—	—	—
643	193	86	364
	643		

The boundaries of the Registration County are not quite conterminous with those of the Administrative County, but the figures are approximate after deducting those for Norwich and Yarmouth. From the statistics supplied by the District Medical Officers of Health I calculate the average annual number of deaths from Pulmonary Tuberculosis in the Administrative County as 250, and from other forms of Tuberculosis as 65, making a total of 315 deaths from Tuberculous diseases on an average every year in the Administrative County. Multiplying this figure by 3 (since the average life of a Consumptive is 3 years) we have to deal with nearly 1000 cases of Tuberculosis in any year in the Administrative County, and an additional 800 in Norwich and Yarmouth.

### (b) EXISTING MEANS FOR TREATMENT.

#### 1. VOLUNTARY INSTITUTIONS.

(a) Kelling Sanatorium, which has at present 70 beds, not limited to Norfolk. Shortly to be raised to 100 beds, and willing to contract with the County and other Authorities. Has a resident Physician.

(b) The Children's Sanatorium near Holt, at present 20 beds. An additional 20 beds will come into use in the Autumn. Telephonic communication with a Holt doctor arranged for, and application will be made for a Teacher or Nurse-Teacher for the 40 children. Willing to contract for 6 or 8 beds with the Norfolk County Authority.

(There is a Private Sanatorium at Mundesley for the accommodation of paying patients not entitled to Sanatorium benefit under the Insurance Act, 1911.)

## 2. SANITARY AUTHORITIES AND BOARDS OF GUARDIANS.

A few of the Workhouses have a bed in constant occupation by a consumptive. From the replies of 8 Rural Districts it appears that in 8 districts 86 consumptives and [or] their dependants are yearly in receipt of out-relief. Two out of 15 replies show that some facilities are supplied by two Sanitary Authorities for the assistance of diagnosis, etc., by the bacteriological examination of sputum. Three open-air shelters have been provided by one Authority and one by another. Printed precautionary pamphlets are left at houses where a case has been notified, and disinfectants and spittoons supplied by several Districts, and some sort of disinfection after death undertaken by others; but there is no evidence that such disinfection has been carried out on carefully thought-out scientific lines.

3. The nucleus of a tuberculin clinic has been initiated at the Norfolk and Norwich Hospital by Dr. Burton-Fanning.

4. About 4 or 6 beds are I believe in constant occupation for consumptives at the Norfolk and Norwich Hospital, of which probably 2 are County cases, and my returns from Boards of Guardians indicate that some 7 or 8 beds are in constant occupation among the Workhouses in the Administrative County. (Norwich and Yarmouth no doubt deal with some of their consumptives at their Workhouses.)

5. In addition to above special means, there is of course such treatment of a symptomatic nature as is possible in ordinary general practice—but this is generally only in the later stages of the disease, as patients rarely seek medical advice early.



Among the most urgent requirements in Norfolk for the prevention of Phthisis would appear to be an increased wage for labourers, with a family, and better cottage accommodation, especially as regards a larger number of well ventilated bedrooms per house. Were every Sanitary Authority able to realise its duties and responsibilities under the Housing Acts, the improved housing conditions and circumstances would result in a further diminished incidence of Phthisis and other infectious diseases. As matters are at present, Sanatorium or Hospital treatment will often be recommended simply because the houses are unhealthy and unsuitable for a tuberculous person.

In connection with domiciliary treatment, home visiting by Health Visitors and Nurses will be essential.

Where District Nurses are available these might be employed under contract with the Norfolk Nursing Federation or other Nursing Association. Many are as yet, however, without a Nurse, and the needs of these areas will probably require to be met by the appointment of a few specially trained Health Visitors by the County Council on the lines I suggested in my Quarterly Report to the Public Health Committee in December last.

In any scheme the Local Sanitary Authorities should be included, because cases of Pulmonary Tuberculosis are primarily notified to District Medical Officers of Health. It is true the majority of these are generally somewhat advanced cases, but arrangements must be made for medically examining the other members of a household from which a case is notified, and it would probably prove impracticable to carry out any scheme effectually without the active co-operation and sympathy of the District Medical Officers of Health and of medical practitioners generally.

The Insurance Committee will be responsible for the maintenance of *insured* persons, and it seems only reasonable that the District Sanitary Authority should be responsible for the cost of such patients as are *not* insured persons or their dependents, or who will not come under the Poor Law, and should make arrangements for such repayments from patients as may be feasible. The District Sanitary Authorities are also the responsible bodies for the sanitary supervision of the homes of patients, but I endorse my recommendation in my Quarterly Report for December, 1911, that should the suggested Health Visitors be appointed, they should be at the service of

District Authorities on lines to be drawn up by me in consultation with District Medical Officers of Health. This would be, of course, contingent upon satisfactory financial arrangements between the County Council, the District Councils, and the Insurance Committee.

For purposes of economy and efficiency the question should be considered as to the advisability of building two Hospitals of 100 beds each, for cases of Scarlet Fever, Diphtheria, and Enteric Fever, as well as for Tuberculosis.

At Brighton Borough Sanatorium, where I was Resident Physician for six months, the reception of Pulmonary Tuberculosis in a separate ward-pavilion has been carried out for more than ten years. Had there been sufficient accommodation available I should have advised the same procedure at Southend-on-Sea. Already three or four different infectious diseases are treated in most large Fever Hospitals on the same site and under the same administration; and there is no logical reason why Tuberculosis should not be added, subject to existing precautions to prevent cross infection. As regards insured persons, the Insurance Commissioners would first have to be consulted as to whether they would agree to such an arrangement.

The next step is to estimate the needs of the Administrative County generally. This involves an acquaintance with the work now being done by District Sanitary Authorities under the recent Tuberculosis Regulations or otherwise. This information has been briefly summarised above, and does not at present amount to much, many District Councils apparently looking for a lead from the County Council. The next step, therefore, should be the formulation of the outlines of a Scheme, in developing which the needs of children are to be carefully borne in mind. This cannot well be done until the further promised Report of the Departmental Committee is published. A Scheme on the lines laid down in the Interim Report could easily be drawn up, and would merit consideration if the object is to obtain as much of the Grant as possible as is available for Norfolk. But the Departmental Committee recognised that a reasonable measure of latitude and elasticity is necessary in the development of Schemes to suit the varying local conditions, and at this stage it is certainly not desirable to lay down any hard and fast lines, and in any case the position in the Scheme of Sanitary Authorities must be



considered as well as the relation of Boards of Guardians and local Insurance Committees. A large proportion of the patients to be treated will be persons referred by the Insurance Committee, for the cost of whose treatment that Committee will be responsible.

But it by no means follows that a Scheme which is essential for a large and concentrated population can be applied to a scattered population in a sparsely populated rural area. The Departmental Committee indeed itself recognised that in some rural areas no Dispensary accommodation would be found necessary as the Tuberculosis Officer will himself call upon patients in their own homes.

With the exception of main Dispensaries in Norwich, Yarmouth, and King's Lynn (in the two former instances arrangements could be made for contracting with the Town Councils), there is hardly occasion, in my opinion, for the provision of buildings costing £250. In all other sub-centres two or three rooms in a cottage would be sufficient.

## SUMMARY.

The main objects to be aimed at are :—

- (1) The ferreting out of early cases with the object of preventing their becoming infective.
- (2) The education of intermediate cases to reduce the risk of their infecting others.
- (3) The isolation of advanced cases which are the chief sources of renewed infection.
- (4) The efficient treatment of all cases—special attention being given to the early cases.

1. ORGANISATION FOR EFFECTING THESE OBJECTS.—The Sanitary Authorities in conjunction with the Tuberculosis Dispensaries should have a sufficient Staff to follow up notifications by domiciliary visits to inquire into the environment and housing conditions and, into the conditions of the workshops and work-places; to trace, if possible, the source of infection, to prevail upon other inmates who may not be well to seek medical advice, or attend at the Dispensary of the area; to provide disinfection of infected rooms where required. It is clear that additional Health Visitors will be needed for this preliminary work. (See Quarterly Report of the County Medical Officer, December, 1911).



2. ESTABLISHMENT OF DISPENSARY AREAS.—Each must be under the supervision of a Tuberculosis Medical Officer specially skilled in the diagnosis and modern treatment of Tuberculosis. Patients would attend at regular stated times and records kept of condition, treatment, and progress. Two or three beds should be available in connection with each Dispensary area for observation purposes, at the end of which time decision would be made as to the most appropriate form of treatment. King's Lynn would be the most suitable town in the Administrative County for starting a County Dispensary.

3. SANATORIUM BEDS FOR SUITABLE CASES.—The number of these required would depend upon the provision made at the Dispensaries, and upon available Shelters for Domiciliary treatment. In the early stages a considerable number would be required. These may be contracted for at Kelling Sanatorium, but careful consideration must be given to the advisability of building a County Sanatorium which would ultimately be available for other diseases, and towards which a considerable Grant will be forthcoming.

A Sanatorium of 100 beds in 50 acres of ground would probably cost £12,000 to £14,000.

In addition to the Tuberculosis Officers for the Dispensaries, a Resident Medical Officer and a small Nursing Staff would be necessary for such a Sanatorium. Including such provision, the cost of maintenance would work out at about £68 a bed or £6,800 a year for 100 beds.

4. LABORATORY PROVISION FOR BACTERIOLOGICAL EXAMINATION AND RESEARCH.—It is a matter for consideration whether a Laboratory should be established in connection with each Dispensary area or that all should depend upon a Central County Laboratory. The County Medical Officer being an experienced Bacteriologist could arrange for examinations at a Central Laboratory.

5. HOSPITAL PROVISION FOR ADVANCED CASES.—The at-present unused wood and iron hospitals possessed by two or three Districts might be utilised and other similar buildings erected

6. Sanatorium provision for children would in the first instance best be met by contracting with the Childrens' Sanatorium at Holt for four or five beds.

SCHEMES SUBMITTED BY THE COUNTY MEDICAL OFFICER *RE*  
TUBERCULOSIS CONTROL AND PREVENTION, ESPECIALLY  
AS AFFECTED BY THE NATIONAL INSURANCE ACT, 1911.

PRELIMINARY POINTS FOR CONSIDERATION.

1. Tuberculosis is a decreasing disease.
2. Tuberculosis in Norfolk is below the average for England and Wales, especially among the male population. Males as 13 to 16. Females as 11 to 12.
3. There are on an average about 250 deaths a year in Norfolk from Pulmonary Tuberculosis, and rather over 300 deaths a year from Tuberculosis of all forms.
4. This means a fresh 300 cases of Tuberculosis every year, and a probable 1000 cases in the County in any one year to consider in reference to any scheme for treatment.
5. Tuberculosis is chiefly a disease of poverty, and the great majority of cases occur among the poor.
6. It is clear that Sanatorium or institutional treatment cannot be made available for 1000 persons in Norfolk, even were it desirable. At the most such provision can only be made for about two-fifths of this number.
7. It is therefore equally clear that too much reliance must not be placed on Sanatorium treatment, but that other available treatment should be carefully considered.
8. To meet this need what is called "Dispensary" provision must be made. The French term "Preventorium" is probably preferable.
9. There are two forms of Dispensaries already in existence elsewhere. There are (1) The Tuberculin Dispensary, and (2) The Tuberculosis Dispensary.
10. The latter form, or Tuberculosis Dispensary, is that favoured by the Astor Report—they have proved of great use in Edinburgh and London. It is the first of the two main units in the scheme for the detection, prevention, and treatment of the disease which the Departmental Committee recommended.

Its functions are fully set out in their Report, p.p. 11-14, Secs. 18-21.

11. On the other hand, the Tuberculin Dispensary has been founded and based on the idea that the poor afflicted with Tuberculosis, even in a relatively advanced stage, can be treated successfully by the use of Tuberculin alone, without sacrificing either their employment or their wage—the patients continuing to live under their ordinary conditions.

12. A Tuberculin Dispensary has been at work in Kennington Road, London, for over two years, and in Portsmouth a Municipal Tuberculin Dispensary has been in existence for over a year. Others have been more recently brought into work at Inverness, and in Dublin and at Naas (inaugurated by the Countess of Mayo).

13. It is claimed that by a proper course of Tuberculin treatment it is almost the rule that cough and expectoration cease, so that the victims themselves cease to be a danger to their friends and relations.

14. Bandelier and others claim to have proved that Tuberculin treatment is a much more powerful factor in converting infectious into non-infectious cases than the best Sanatorium treatment.

15. Sanatoria as at present constituted, wish to take in only early cases. At Tuberculin Dispensaries cases relatively advanced can be dealt with, while hospital isolation is desirable for very advanced cases which are most infective. On the whole, however, it is clear that a Dispensary limited to the treatment of Tuberculosis by Tuberculin must be less effective than a Tuberculosis Dispensary as defined in the Astor Report. The greater includes the less.

16. Hospital accommodation for very advanced and surgical cases, and Dispensaries or “Preventoria” would appear to be the main factors in dealing with three-fifths of the cases, while Sanatorium treatment would be available for only two-fifths.

17. In formulating a scheme the first essential is to set out as far as is known the existing prevalence of Tuberculosis in the County and the existing means for dealing with it.

18. EXISTING PREVALENCE.—Compulsory notification of cases of Pulmonary Tuberculosis to District Medical Officers of Health having come into force since January 1st, valuable information is now available to supplement that to be obtained from the vital statistics of each District and the Annual Reports of the Registrar General.



19. The following tabular statement indicates the information obtainable from these sources:—

District.	Census Population, 1911.	Avg. Annual No. of Deaths, 1908—1911.	No. of Notif. in 8 mths., 1912.	Acreage.
URBAN—				
Cromer ..	4,074	3	4	1,062
East Dereham ..	5,729	9	11	3,674
Hunstanton ..	2,510	2	3	1,003
Downham Market ..	2,497	2	5	5,313
Diss ..	3,769	5	3	359
Sheringham ..	3,376	3	22	4,256
Swaffham ..	3,234	2	1	877
Walsham, North ..	4,254	7	3	7,592
Walsoken .	3,898	2	9	4,907
Wells-next-Sea ..	2,565	2	0	2,670
Thetford M.B. ..	4,778	6	12	7,096
King's Lynn M.B. ..	20,205	24	18	3,067
Totals (Urban) ..	60,889	67	91	41,876
RURAL—				
Aylsham ..	17,346	19	24	69,341
Blofield ..	12,159	14	15	45,785
Depwade ..	19,934	15	17	79,742
Docking ..	16,942	15	14	88,091
Downham ..	15,527	17	20	81,930
Erpingham ..	17,137	17	18	28,991
Flegg, E. and W. ..	9,931	4	0	62,218
Forehoe ..	11,383	12	7	38,528
Henstead .	10,285	10	8	75,075
Loddon and Clavering	12,550	13	17	42,380
West Lynn ..	935	10	1	1,638
Freebridge Lynn ..	12,107	12	6	60,273
Marshland ..	12,384	12	6	54,572
Mitford and Launditch	18,701	23	20	102,371
St. Faith's ..	10,807	13	14	48,933
Smallburgh ..	13,424	11	17	62,627
Swaffham ..	7,571	6	3	74,556
Thetford ..	10,061	9	10	95,873
Walsingham ..	17,248	12	25	79,996
Wayland ..	14,427	15	21	68,774
Totals (Rural) ..	260,859	249	263	1,261,694
(Urban) ..	60,889	67	91	41,876
Total, Admin. County	321,748	316	*354	1,303,570

\* Add 177; probable notifications in 12 months, 531.

The above figures indicate that with the exception of Sheringham, only cases sufficiently advanced to be clearly clinical Pulmonary Tuberculosis are being notified, but the figures of notification form the basis for the District organisation for the detection of cases which will be included among the existing means for dealing with Tuberculosis. Taking the average number of deaths per year as a standard, it will be within the mark if we reckon that there are three existing cases for every death recorded. Multiplying the above figures by three would indicate that we have at least 948 cases of Tuberculosis to deal with. At any rate, we must calculate on a fresh incidence of about 300 cases of Tuberculosis every year.

20. The existing means for treatment are clearly insufficient in the matter of organisation. They include—

1. Treatment by Private Practitioners.
2. Treatment by Sanitary Authorities.
3. Treatment by Boards of Guardians.
4. Treatment by Education Authority.
5. Treatment in Hospitals.
6. Treatment in Sanatoria.

21. The treatment by Private Practitioners at present does not begin until the patient goes to the Doctor. This is generally not until the disease has been progressing for some time. It is the exception for any Tuberculin treatment to be administered.

22. Treatment by Sanitary Authorities does not as a rule begin until notification is received from the Medical Practitioner. In no instance does any Sanitary Authority exercise its full powers. In a few instances facilities are provided for the assistance of diagnosis, etc., by the bacteriological examination of sputum. One Authority (Forehoe) has provided three open-air shelters and one or two other Authorities have provided a shelter or are contemplating making such provision. Several Authorities now issue printed precautionary pamphlets, which are left at houses where a case has been notified. Disinfectants and spitting flask are also supplied in some districts, and most Authorities undertake some sort of disinfection of rooms after death of a patient. No regular organised method is in force applicable to every District, and this will be the first requisite in any practical scheme.

23. TREATMENT BY BOARDS OF GUARDIANS.—This, as a rule, applies only to late cases, when illness of the breadwinner results in destitution. A few of the Workhouses in Norfolk have a bed in constant occupation by a Consumptive. After circularising the Boards, I gather from the replies that in eight Districts there are 86 Consumptives and their dependents in yearly receipt of out-relief.

24. TREATMENT BY THE EDUCATION AUTHORITY is at present indirect by the discovery at School by the School Medical Officers of children in the incipient stage of Tuberculosis whose parents are advised as to general hygiene and feeding and to consult a Doctor. Exclusion from School for a prescribed period for an outdoor life is often prescribed. The part played by the Education Authority in a fully organised scheme will be of supreme importance in the matter of prevention. In fact, one of the principal objects to be kept in view is to prevent children already infected with the Tuberculosis germ from becoming cases of "open" Tuberculosis.

25. TREATMENT IN HOSPITALS.—Unfortunately very few cases are treated in General Hospitals. I am informed that at present no cases are admitted to the Lynn and West Norfolk Hospital, but that at the Norfolk and Norwich Hospital about 4 to 6 beds are in constant occupation by Tuberculosis (Pulmonary) cases. A few beds would also be utilised for cases of Surgical Tuberculosis.

I have already indicated that some 7 or 8 beds are in constant occupation among the workhouse infirmaries in the Administrative County. Altogether not more than from 10 to 20 of the 250 deaths from Pulmonary Tuberculosis occur in institutions.

(N.B.—The nucleus of a Tuberculin clinic has been initiated at the Norfolk and Norwich Hospital by Dr. Burton-Fanning.)

26. TREATMENT IN SANATORIA.—Three Sanatoria exist in Norfolk. One of these at Mundesley is run for paying patients. The other two at Kelling, near Holt, are independent institutions—one for adults and the other for children. They are largely run on philanthropic lines, and are under the management of lay Committees, and are willing to contract for the supply of beds for Norfolk patients.



27. In my opinion the provision can best be made by a reorganisation of the County Medical Officer of Health's Department, and by appointing five Assistant County Medical Officers, who shall be Tuberculosis Officers as well as Assistant School Medical Officers for their respective areas. In appointing two additional Officers (three already holding office) special stress would be laid upon their Tuberculosis experience.

I had this in mind a year ago when a vacancy occurred. One of the candidates interviewed, but not appointed as School Medical Inspector, has since been appointed a Tuberculosis Officer to one of the more important counties.

I. SCHEME A. Complete Scheme (which may be dealt with in Sections):—  
ESTIMATED COST.

The following provisional outline of a Complete Scheme, to include both units recommended by the Departmental Committee may commend itself as combining economy with efficiency:—

(a) SALARIES—					£	£
Five Medical Officers at £400, rising to £500	..	..	..	..	2000	to 2500
Subtracting £800 already paid by Education Committee					800	800
				Balance	1200	to 1700
Five Nurses at £80	..	..	..	..	400	
Three Clerks at £80	..	..	..	..	240	
					1840	
Insurance Committee would allow say	..	..	..	..	1000	
				Balance	£840	
(b) ESTABLISHMENT AND MAINTENANCE—					Cap.	Main- tenance
Five Cottages as Dispensary Centres at £15 a year each	..					75
Furnishing and Equipment of 5 cottages	..	..			375	
Tuberculin, etc.	..	..	..	..		500
Fees to Doctors for Domiciliary Treatment, 200 cases at £6 each						1200
Hospital—50 beds at £120 each	..	..	..	..	6000	3500
Sanatorium—25 beds at Kelling	..	..	..	..		2100
5 beds, Children's Sanatorium	..	..	..	..		300

[OVER

	Cap.	Main- tenance.
	£6375	7675
Less Government Grant—Four-fifths of Capital Expenditure	5100	
Balance to be provided by County Council..	£1275	
Insurance Committee, say half of Expenditure ..		3825
	Balance	£3835

These two sums, £1275 for Capital Cost, and £3835 for Maintenance, would total £5110, or roughly  $\frac{5}{8}$ d. rate. Each constituent Sanitary District would then pay only about £40 towards capital cost and £100 a year towards maintenance.

The Education Committee is at present paying £800 in salaries, and nearly £300 in travelling expenses for three School Doctors.

This sum would be available towards the provision of five Medical Officers, whose duties would combine School Medical Inspection and Tuberculosis work.

N.B.—Recent utterances by the Chancellor of the Exchequer nullify the above estimate.

I have above outlined a complete scheme for dealing with Tuberculosis on the lines of the Departmental Committee's report, but I have purposely hitherto withheld financial details unless asked for them because I consider it unnecessary in detail for an agricultural County like Norfolk, and because I am of opinion that the problem of dealing with Tuberculosis in the County can be dealt with much more economically and quite as efficiently by a greatly modified scheme.

For this purpose a reorganisation of my Department would be necessary, but this would do away with the necessity of appointing special Tuberculosis Officers.

I have gone carefully into the probable amount of Tuberculosis in the County, and bearing in mind the size of the County, its scattered population, its want of railway facilities, and its lack of large towns, I am sure that both School Medical Inspection and the grappling with Tuberculosis problems

could be dealt with by dividing the County into five areas, appointing to each an Assistant County Medical Officer, who would be Tuberculosis Officer as well as School Medical Inspector for his area. He could devote three days a week to School Medical Inspection and three days a week to Tuberculosis work. It would, of course, be necessary that he should have some special experience in connection with modern methods of dealing with Tuberculosis, and should have the advantage of a Public Health training, preferably possessing the Diploma in Public Health. This would facilitate his co-operation with the District Medical Officers of Health, who being the Officers of the Local District Councils, are the Officers of the Authorities which possess power under the Public Health Acts and the Tuberculosis Regulations of November, 1911, for dealing with notified cases of Tuberculosis. It is for this reason especially that the Local Sanitary Authorities and their Medical Officers of Health cannot be omitted from any practical scheme for dealing with Tuberculosis. In a comparatively small area the Officer should also become better acquainted with the local Practitioners through whom come the initial stages of notification, and who will have to be responsible for domiciliary treatment in a larger proportion of the cases to be dealt with.

This is so because—(1) a Sanatorium of even 100 beds, available for Tuberculosis, could not deal with more than one or two-fifths of the cases of Tuberculosis in Norfolk. (2) Tuberculosis Dispensaries, such as are workable in large towns, cannot be effectually worked in sparsely populated and wide rural areas with inadequate travelling facilities. In other words, it will be impracticable for many patients to come to a Dispensary twice a week or so where this involves covering several miles by vehicle other than train or tram.

Tuberculosis Dispensaries such as would prove valuable in large towns would not meet the needs of rural Norfolk. In many cases the Tuberculosis Medical Officer will have himself to be the Dispensary, travelling to see the patient, and it will be very necessary for him to do this in conjunction with the attending practitioner, who will have to carry on the agreed upon treatment between whiles.

The five Districts I would propose would be approximately as follows :—

- (1) A district comprising King's Lynn, West Lynn, Freebridge Lynn, Downham Rural and Urban, Marshland Rural and Walsoken Urban Districts.



- (2) Swaffham Urban and Rural, Thetford Urban and Rural, and Wayland Rural Districts.
- (3) Diss Urban, Depwade, Forehoe, Henstead, Loddon and Clavering, Blofield, and East and West Flegg Rural Districts.
- (4) Smallburgh, St. Faith's, Aylsham, and Erpingham Rural Districts, and North Walsham, Cromer, and Sheringham Urban Districts.
- (5) Walsingham, Docking, and Mitford and Launditch Rural Districts, and the Urban Districts of East Dereham, Wells, and New Hunstanton.

The population, acreage, estimated number of schools and scholars, and Staff required for each District are given in the following table :—

District.	Population.	Area.	Estimated No. of Tuberculosis per annum.	No. of Schools and School Children.	Staff required.
Lynn District or West District	67,553	222,192	206 (68 new cases)	(75) 8,756	1 Doctor 1 Nurse (whole time) Dist. Nurses
Thetford District or S.W. District	40,071	253,891	117 (40 new cases)	(70) 6,921	1 Doctor 1 Nurse Dist Nurses
South East District	80,011	299,373	219 (370 new cases)	147, 14,801	1 Doctor 1 Nurse 1 Clerk Dist. Nurses
North East District	70,418	249,314	222 (70 new cases)	102, 12,057	1 Doctor 1 Nurse 1 Clerk Dist. Nurses
North West District	63,695	278,800	129 (43 new cases)	101, 12,112	1 Doctor 1 Nurse Dist. Nurses

For obvious reasons the doctor should reside in that part of the district from which he can best get about the district, and also with the best travelling facilities for such of the patients as can visit him with the approval of the attending practitioner.

These centres would be King's Lynn for the Eastern District, Watton or Thetford for the South Western District, Norwich for the South East District, North Walsham for the North East District, and Fakenham for the North West District.

## SANATORIUM AND HOSPITAL PROVISION.

As regards Sanatorium and Hospital provision, the latter is probably the more important from the public health point of view for taking cases of advanced Tuberculosis, and thus removing from the home the cases in the most infective stage of the disease.

Remembering that in the future sanatorium benefit will apply to other diseases as well as Tuberculosis, it is much to be recommended that hospital provision should be included in a complete scheme, to be gradually evolved so as to secure the proportion of the £1,500,000 that will be allotted to Norfolk under the provisions of the Finance Act, 1911.

It is mainly for this reason that it may be well that an estimate be included in a complete scheme for hospital or sanatorium purposes. The site need not be more than 50 acres for eventualities, and the immediate provision of say 50 beds, equally capable of extension. Such a hospital would be useful for the isolation of advanced cases from unsatisfactory homes and for education purposes for a few weeks in early cases. If such hospital or sanatorium accommodation be not entertained, the estimate would be reduced by £6000 capital and £3500 maintenance, and the required rate proportionately reduced.

Meantime it would be advisable to contract with the Kelling Sanatorium for a definite number of beds—say 25—and with the Children's Sanatorium near Holt for, say, 5 beds.

As regards Tuberculosis Dispensaries, nothing more elaborate than a few rooms in towns in which the Medical Officers will reside will be necessary, and the equipment need only be simple. It would be preferable to have a cottage standing in an open situation with sufficient garden area for erecting one or two shelters with beds for the purpose of keeping occasional cases under observation.

## STAFF.

A doctor and a nurse will be necessary in each area, but in each instance the work could be combined with School work, for which funds from the Education Committee would be available. Where the number of cases a year is under 130 (as estimated in districts 2 and 5) possibly the doctor and nurse could cope with the clerical details required, but in the larger areas some clerical assistance would probably be required. The nurse should be specially trained in Tuberculosis work, and her services should be available by the District Councils in each area for Tuberculosis purposes, the Councils paying a proportionate part of her salary.

One of the five doctors should be of sufficient age and should have had such special experience in Tuberculosis work as to be able to act as consultant in specially difficult cases, and to have the confidence of his colleagues and of the general practitioners in the County. To him would be entrusted, under the County Medical Officer, the collection, tabulation, etc., of all Tuberculosis data; and, independently, the consultation in exceptional cases, and the advising as to form of treatments to be carried out—in this capacity advising the Insurance Committee by contract with the Council. He would have proportionately less School work to undertake.

## II. SCHEME B. Provisional (including Dispensary Unit but not Sanatorium or Hospital Unit).

### ESTIMATED ANNUAL COST OF EACH DISPENSARY AREA.

Salary of Tuberculosis Officer, who would also be		
School Medical Inspector .. ..	£400, say to £500	
Expenses of each Tuberculosis Officer .. ..	£50	
Salary of Nurse for each area, also used for School		
Work .. .. .	£80	
Travelling Expenses of Nurse .. ..	£40	
Provision of Drugs and Appliances .. ..	£25	
Rent, Lighting, Cleaning, etc. .. ..	£30	
	<hr/>	
	£625	

Of this sum £250 presumably to be paid from Education Fund  
as now; about £200 from Insurance Committee.



This would leave £225 to be met out of District and County Funds for each Dispensary Area. Multiplying this by 5 gives £1125 for the four areas, for which the 32 District Councils might well contribute between them almost the whole amount in a  $\frac{1}{8}$ d. County rate.

Under this Scheme, at the most, the contribution from the County Funds would be negligible.

The Tuberculosis Officer of higher standing and experience who would act as adviser also to the Insurance Committee could be paid an additional salary, a moiety to be refunded by the Insurance Committee.

Many County Councils have already appointed Tuberculosis Officers under the administrative control of the County Medical Officer.

The Estimate given in Scheme B is for each dispensary area (whether four or five are constituted). It will be noticed that it provides for a Staff rather than a building, and would probably meet the broader definition of the first Unit recommended in the Astor Committee's Report.

It does not, however, make any provision for the second Unit such as sanatoria and other hospitals for Institutional treatment, nor does it include the expenses of domiciliary treatment—this matter being still under discussion. As to Sanatoria, assuming that in the first instance it is intended to rely solely upon Kelling for say 25 beds to be kept constantly occupied, this would involve an annual expenditure of £2100, of which, no doubt the greater proportion would be paid by the Insurance Committee. An appreciable proportion of the remainder would probably be secured by fees or repayments from patients among the non-insured seeking Sanatorium treatment.

The most difficult problem in the present somewhat uncertain financial provision of grant (and of monies available from Insurance Committees, Sanitary Authorities, and others eligible for taking advantage of a County scheme), is to estimate what provision should be made and at what cost.

Any scheme must therefore be purely provisional and conditional, and it would seem advisable in the first instance not to do more than appoint an assistant County Medical Officer who would act as Dispensary Tuberculosis Officer at a salary of say £400, at the same time appointing the County Medical Officer Administrative Tuberculosis Officer at an annual salary of say £50.

## Midwives Act.

The Rules of the Central Midwives Board have been revised, and rules formulated with regard to the disinfection of Midwives. Notification must be made to the Local Supervising Authority if a Midwife lays out a dead body.

Miss Bernard Boyce, the Inspector of Midwives, reports 132 Midwives working in the County. About nine per cent. cannot read or write, and their case books and registers are written by a relative or neighbour, to their dictation. All are reported to use a thermometer, the Inspector of Midwives having instructed more than half the practising Midwives in its use. Miss Boyce also has homely individual talks with the Midwives as occasion offers.

1,557, or 22·2 per cent. of the 6,998 births registered in the Administrative County were attended by registered Midwives. There were 101 notifications of sending for medical help. No death of a lying-in woman was recorded in 1911, but 33 still-births were notified, and in addition the deaths of 7 prematurely-born infants were recorded.

Only one case of Puerperal Fever occurred where a registered Midwife was solely responsible.

Four Midwives whilst working as "Nurse" in connection with septic cases were suspended from practice for short periods.

Disinfection is provided by the District Sanitary Authorities on notification to the District Medical Officer of Health, who is empowered to take such action as he is legally authorised to take for preventing the spread of Puerperal Fever.

The cases of three Midwives, after local enquiry as to conduct, were referred to the Central Midwives Board. The Certificates of two were cancelled by the Board and their names removed from the Roll.

Four prosecutions were instituted under Section 1 (2) of the Act, in each case resulting in conviction and fine. Twelve cautions were given to uncertified women. Two cases of Ophthalmia among the newly-born were reported, and received prompt medical attention.

Every Midwife has been supplied with a copy of the revised rules of the Central Midwives Board.



## Food and Drugs Acts.

The administration of these Acts in the County of Norfolk was outlined in my last Annual Report (1910). The County Analyst makes an Annual Report on samples analysed during the previous twelve months at the close of each financial year in March.

His Summary Report for the year ending March 1st, 1912, shows that of 185 samples of milk analysed during the year 30 were adulterated, and 8 others were unsatisfactory, making a total of 20 per cent. unsatisfactory, which is about the same percentage as in 1910. On these figures it would appear that one-fifth of the milk supplied in the County is not up to the required standard. Only one sample of cream was submitted for analysis, but of 49 samples of butter only 1 was found to be adulterated. The other foods examined were insignificant in number of samples, and the only adulteration found were 1 sample of baking powder (out of 11 submitted), and 1 lime juice (out of 3 submitted).

The grand total of samples submitted was 317, of which 273 were pronounced genuine, 33 adulterated and 11 unsatisfactory, giving a percentage of adulteration of 10·4 per cent. on all samples. It is a matter of some moment that the chief article of food, viz. milk, shewed a percentage of adulteration just double that of all samples put together.

In July, 1911, the Public Health Committee reported to the Council that it had been taking into consideration the advisability of taking a much larger number of samples of milk than had hitherto been taken, and had discussed the possibility of assistance being rendered in this matter by the various District Councils. After conference with Dr. Coutts of the Local Government Board and consideration of alternative Schemes the Committee thought there was sufficient warrant to recommend the County Council to adopt the following plan:—"That the Urban District Councils should take as many samples of milk in their districts as they may consider expedient, and that the County Council should bear the cost of purchase, analysis, and proceedings in respect of such samples; the local Inspectors of Nuisances to be appointed as officers of the County Council, without pay, for the purpose of taking such samples. The present three Inspectors under the County Council to continue to take the same number of samples as heretofore, but samples of milk will not, as a rule, be taken by them in those Urban Districts where the suggested arrangement is satisfactorily in force; but the Council, of course, reserve the right to take samples at any time in any Urban District whenever they may deem it expedient to do so."



## Water Supplies.

The Water Supplies of the County are derived from the rivers and streams, and broads; from deep and shallow wells; from springs in the chalk and the green sands; and in parts of Marshland from rain water collected in underground tanks. In these latter districts, in time of drought, the inhabitants are forced to fall back upon pond waters. Fuller particulars were given in my Annual Report for the year 1908, and I would draw particular attention to the suggestions as to the construction of wells on page 21 of that Report.

The most notable improvements in supply during 1911 were: (1) in parts of West Norfolk where the Wisbech Company's Mains were extended to certain villages in the Downham and Marshland Rural Districts, and to additional houses in Downham Market, and (2) improved deep well supplies in the village of East Harling. (3) Considerable progress was made in the matter of the provision of a public water supply for the Urban District of Diss, and the works are almost complete at the present time. Some memoranda as to the quality and risks of some of the supplies are given in the following abstractions from District M.O.H.'s Reports:—

### RURAL DISTRICTS.

*Aylsham.*—"There is no public water supply to any of the villages in the District. Private wells of varying depth supply the needs of the people. The surface water wells are in constant danger of pollution by percolation from sunk privy bins, slop holes, and refuse heaps, and the maintenance of a pure water supply depends more on the removal of these sources of contamination than on the cleaning out and the repair of the wells themselves. During the year three new wells have been sunk and nine wells have been cleaned out or repaired."

*Blofield.*—"My report for the year 1908 contains a general description of the water supply of the District. Three new wells have been sunk and two have been cleaned out."

*Depwade.*—"There is still no public water service in your District. In the larger houses, factories, and maltings, deep borings are made use of; the greater portion of the drinking water is obtained from shallow wells. The

cottagers depending upon a water supply from pond and ditch suffered severely during the summer's drought: advantage was, however, taken of the exceptional season for the cleaning out of ponds and catchpits.

“During the year 20 samples of drinking water have been subjected to analysis, of which—4 were condemned as unfit; 6 passed as potable; 10 referred for well cleaning or pump repairing.”

*Docking*.—Not reported.

*Downham*.—“A large portion of the district is now supplied by the Wisbech Water Works Company with water derived from the springs at Marham. Where this is not available the supply is obtained from wells, for the most part shallow. In the Fen district the water supply is rain-water collected in tanks and underground cisterns, and owing to the dry summer there was a considerable difficulty in obtaining water, and many were obliged to get their drinking water from the river and dykes.

“In previous years the inhabitants of Barroway Drove have suffered in this manner, but, as was reported last year, the water main was extended from Magdalen, much to their benefit, and was greatly appreciated, especially during the long drought.

“None of the water in the District is plumbo solvent.

“Last year I drew attention to the water supply at Hilgay.

“Negotiations were entered into with the Wisbech Water Works Company with the hope of getting them to extend their main from Downham; but owing to the estimated cost (£1,708) of the undertaking and the lack of support from the inhabitants, the scheme has been dropped. Had this scheme been carried out it would have been of great benefit to the village. Although the guarantee required (£170) was considerable, yet it would have been partly, if not entirely, covered, had the inhabitants of Hilgay and those *en route* been willing to avail themselves of this supply.

“If the Marham water had been taken to Hilgay, it would have been a simple solution of the water question. I believe there is plenty of water to be obtained by sinking wells, but the water so obtained is not above suspicion. One well sunk at the top of the village three years ago, after repeated analysis, still showed signs of pollution.

“Many of the wells are very shallow and badly constructed, with the top of the well on a level or slightly below the ground, thus affording no protection from surface pollution. To remedy this state of things it will be necessary to call upon the owners of property to improve the condition of the wells, a course which hitherto has not been adopted in view of the possibility of obtaining the Marham water.

“The condition of many of the back premises are such as to be a source of perpetual menace to the water supply in the wells, and your Council has already arranged that every house shall be provided with a portable sanitary dust-bin, and that scavenging shall be carried out more frequently.

“During the year I have analysed	37 samples of water.
Well linings raised and new covers fixed	16.
Rain-water cisterns provided .. ..	18.
Pumps fixed .. ..	2.
Water certificates granted .. ..	17 (for 19 houses).
„ „ deferred .. ..	2.
Houses voluntarily connected to water main	32.”

*Erpingham.*—Mundesley is supplied from a well over 300 feet in depth, pumped into a reservoir giving a constant supply. Holt is supplied also from a deep well giving a constant supply. Kelling is well supplied from a spring in the hills by gravitation through pipes, giving a constant supply of good water. All these supplies are the property of the parishes concerned. Overstrand, East and West Runton, Felbrigg, and a portion of Roughton, are supplied from the Cromer Council’s Water Works. The other parishes in the district are supplied by wells, some deep and some shallow. There is no evidence of pollution of streams or rivers in the district.

*Flegg East and West.*—The water is derived for the most part from wells, and is of a good quality, and every parish has an abundant supply.

*Henstead.*—“Water supply of District is the same as in last Report.

“Six samples of water were taken for analysis, one of which was of excellent quality, four were of moderate quality, and in each of these cases the wells were opened, pumped out, and cleansed, and necessary steps taken to prevent pollution; one sample was unfit for drinking purposes.



“Two fresh supplies were provided to five existing houses; four houses had the Norwich Company’s water laid on. Three new wells were sunk to supply new houses, one new house had the Company’s water laid on, and three water certificates were granted under the Public Health Water Act, 1878.”

*Loddon and Clavering.*—The water supply of the neighbourhood is on the whole good, and I have found no pollution of any well during the past year.

*West Lynn.*—[Not reported on this year—but I know the matter remains *in statu quo*.—J.T.C.N.]

*Freebridge Lynn.*—The new public well at Great Massingham ran dry in the summer, and a fresh contractor has been deepening the well in order to find water. It was then found that the previous supply had been surface water only. Although some 50 feet or more have been sunk below the 56 feet of the well, water has not yet been reached.

*Marshland.*—“About half the District derives its supply from the Wisbech Mains. The rest depends on cisterns and shallow wells which during the prolonged drought of last summer proved quite inadequate both in quantity and quality.

*Mitford and Launditch.*—“The Rural District of Mitford and Launditch is purely agricultural, there being no towns or manufactories. There is a thick layer of boulder clay lying on chalk throughout nearly the whole district. The higher parts are plateau gravel, and the low-lying alluvial deposit.

“The water supply is causing me the greatest anxiety, for as I pointed out last year there is a gradual deterioration. During the year I analysed 32 samples of water, of which 23 were not fit for use, and 9 were good.

“In the wells condemned the usual trouble was percolation from privy, pigsty, farmyard or fowl run in the vicinity. As I have pointed out before, nearly all our wells are of the surface type, going down to the boulder clay, so that they are dependent on the cleanliness of the surroundings for the purity of the water. When the pollution has been due to percolation in the immediate vicinity and there is a deeper supply of good water, we have adopted the method advocated by our Sanitary Inspector (Mr. Read),

and had the well cemented down to the pure supply and a load or two of sand poured into the well—this has been quite satisfactory in some cases. Five new wells were sunk, and 16 cleaned out during the year.

There has been no need for any action to be taken during the year for pollution of the streams, as this has been remedied during previous years.

*St. Faith's*.—Not reported upon.

*Smallburgh*.—In spite of the drought last summer there was no lack of water. All springs were high before the drought, and springs and wells are the chief source of supply in the District.

*Swaffham*.—"Ten wells were cleaned and repaired. I analysed eight samples of water, of which three were found unfit for domestic purposes; in these cases steps were taken to improve the supply."

*Thetford*.—"There is no public water supply in the District, each cottage or group of cottages being supplied from wells, which are for the most part shallow and liable to surface pollution."—See extract from Quarterly Report of County M.O.H. *re* East Harling below.

*Wayland*.—Not reported on.

*Walsingham*.—"The water supply of the District is exclusively derived (with the exception of the artesian well at Melton Constable) from surface wells of varying depth. Frequent examinations are made by myself, and in doubtful cases by the County Analyst. In those cases where the water was found to be contaminated the wells were cleaned out and any defect made good. In the drought there was a shortage of water. No definite steps have yet been taken with regard to the public water supply of Fakenham, but in view of the sewage scheme shortly being commenced, I think that this is essential, and that the town would greatly benefit. The present water supply is derived from shallow wells, very liable in the confined area of the town to pollution."

## URBAN DISTRICTS.

*Cromer*.—"The water supply was sustained during a period of great drought without any failure, and the measures that have been taken by you to wash out the mains have in my opinion been very successful in preventing the frequent causes of complaint in former years of the presence of oxide of

iron ; though after consideration of the great expense involved, you decided not to proceed with the question of filtration at present.

“The water has been maintained in its usual state of great purity.”

*East Dereham.*—“The supply from the waterworks was ample for the dry summer, and is still of the same excellent quality.”

*Downham Market.*—“Much improvement has taken place in the water supply to house property during the year. The main of the Wisbech Water Works Company has been extended to include Priory Road, where it was much needed, and water has been laid on to 60 additional houses during the year. There are now about 127 houses supplied in this way, and the benefit was felt during the hot summer.

“The four public wells have continued to give good water. Numerous samples of water have been taken for analysis, both by the Sanitary Inspector and myself.”

*Diss.*—“Though I am unable to say you have got a water supply, I am now pleased to be able to report that the scheme is well forward, and our Engineer thinks that in all probability we will have the water into our houses this year.”

*New Hunstanton.*—An analysis of the water was made last year and a very satisfactory report was received.

*Swaffham.*—This is derived from a well 165 feet deep with an extended bore 65 feet deep, where the water is pumped off the chalk to a reservoir and so distributed to the town. The supply during the year has been good in quality and quantity.

*North Walsham.*—The main water supply is derived from the Council's well. The White Horse Common water supply is from private wells, most of which are shallow. There has been some shortage of water during the summer.

*Walsoken.*—The water supply has been good and the quantity satisfactory. Is in common with Wisbech.

*Wells.*—“The water supply from the wells of the town has been plentiful and good during the past year, in spite of the prolonged drought. The water from two wells only were complained of, and in consequence samples were sent to the county analyst. One was condemned.”



*Sheringham*.—"The water is supplied by the wells and springs belonging to the Gas and Water Company. The quantity of the water was sufficient for all purposes during the recent dry summer."

"An analysis of the water showed that the water contained low forms of animal and vegetable life."

*Thetford M.B.*—"The water supply of the town continues to be satisfactory. A few of the houses are still supplied by wells."

Extract from Quarterly Report of the County Medical Officer of Health, dated December, 1911:—

"In considering the water supply of any district, town, or village, a topographical investigation is of the first importance, and for the purpose of determining the best means of obtaining an adequate supply of wholesome water for potable purposes, a knowledge of the geological structure of the ground is necessary.

"1. Where a river flows by a town or village the possibility of using it as a source of supply may be discussed briefly.

"Near *East Harling*, for instance, runs the River Thet, in its course between Attleborough and Thetford. Ignoring for a time the fact that most rivers receive washings from manured fields—the particular river in question, the Thet, receives the effluent of Attleborough sewage, and it is clear it could not be considered a potable water without previous treatment by filtration on the most approved methods.

"The next consideration is that the river lies at a lower level than the village of East Harling, which is a straggling village of about 1100 inhabitants, the bulk of the houses being situated over half-a-mile from the river and at higher level. Thus to supply the village would require an efficient pumping plant, reservoirs, and mains—in addition to the filtration plant already mentioned. This would be financially beyond the resources of the village, and the river as a source of potable water supply for East Harling may therefore be dismissed, especially as a better water supply is procurable.

"2. Underground Water Supplies. Here a knowledge of the lithological characters of the rock formations is essential to determine whether

an adequate supply of potable water is obtainable. Like many another village in Norfolk, East Harling has grown up on a large patch of sand and gravel overlying the chalk beneath. Such localities were chosen by our ancestors because of the ease of obtaining water from the sands by means of shallow wells.

“Unfortunately the abundant water found in such formations became gradually polluted through the inhabitants also sinking—thoughtlessly—cess-pits and privies in the same sands. These cesspits were merely pits dug a few feet into the sands, with uncemented bottoms, the sands thus soaking up the liquid contents; the primary object being no doubt to render cleansing of the pits and privies a matter which could be postponed for long periods.

“Now this abominable practice, based on laziness—in other words, the easiest way of disposing of offensive matter—has brought Nemesis in the form of polluted water supplies. Where the sand is coarse or gravelly the pollution is more gross and dangerous. Where the sand is very fine and compact, as is the case at East Harling, the water travels but slowly through it, and opportunity for greater oxidation and more effective relative purification is afforded. Indeed the quality of the sand at East Harling is exactly that best fitted for the filtration of water supplies from rivers or other doubtful sources. Away from the air, however, there, no doubt, would be found wanting what is the most important part of a sand filter, viz., the ‘schlammdecke,’ or film of organic matter formed by the felting together of filaments of fungoid origin agglutinated by bacterial zooglœa.

“As, however, the sand is peculiarly fine, and the stratum has an average depth of 20 feet at East Harling, bacteriological examination of some of the wells which show evidence by chemical analysis of old sewage pollution, would be interesting and instructive, and the bacteriological results might be more satisfactory than the chemical. In the particularly fine filtering character of this sand may indeed lie the explanation of the remarkable freedom from disease which East Harling has enjoyed for many years. But freedom from disease for many years does not in itself justify the continued use of a water which is potentially dangerous.

“In the examination of water supplies, three methods of determining the probabilities of dangerous pollution should be used in conjunction, and I



will state them in the order of their importance :—

- “ (1) Topographical investigation.
- “ (2) { Bacteriological investigation.
- { Chemical investigation or analysis.

“ Considering these in the reverse order : In many cases the chemical method is often the only one employed, and the water is passed or condemned by the Analyst on the data he obtains from examining as to the amount found of free and albuminoid ammonia, amount of nitrogen as nitrates (and nitrites), amount of chlorine as chlorides, and occasionally as to the oxygen absorbed figure. Chemical analysis may, however, completely fail to indicate a small amount of dangerous pollution. On the other hand lithological formations may account for an excess of nitrogen and chlorine.

“ Bacteriological examination is of great use in determining whether sewage bacteria have gained access to a water supply—though it is but rarely that a specific disease organism such as the typhoid-bacillus is found, even in a water supply which has undoubtedly been responsible for an outbreak. There are reasons for this which I need not discuss now. It is, however, sufficient to condemn a water supply if such sewage organisms as *B coli* ; *streptococcus intestinalis* ; and *B enteritidis sporogenes* are found in small quantities such as one or two cubic centimetres.

“ The Topographical investigation is the most important, because it is only in this way that information may be gained to enable a M. O. H. to interpret aright the results of bacteriological and chemical analysis, and to discount apparent discrepancies.

“ When wells and privies or cesspits are found within a few yards of each other in porous soil, and in such relative positions as ensures the gravitation of underground water from the cesspit towards the well, pollution is obviously possible, and in such cases chemical and bacteriological analyses merely serve to estimate the degree of pollution, or to strengthen the position of the Sanitary Authority in dealing with the matter. Shallow-well water supplies can be protected from serious pollution by having the wells properly constructed so as to keep out all surface pollution to the depth of six or eight feet, and by insisting on the abolition of all uncemented cesspits, or other contaminating collections, within 80 feet of the well. The questions of water supply and sewage disposal are closely related and cannot be considered apart.



“The water-carriage of sewage is the most satisfactory for removing effete matter from the curtilage of individual houses and from the site of the town or village, but involves proper provision for a sewerage scheme to include proper drains and sewers, a suitable outfall, and sufficient treatment to prevent nuisance at the outfall.

“If dry methods of disposal of excreta must be adopted owing to the absence of a sewerage scheme, properly constructed privies are essential. They must be of watertight construction, protected from rain, and of a size requiring fairly frequent removal. For removal a regular and systematic scheme of scavenging is the most satisfactory, and in porous soils essential. Where, however, a cottage is provided with two-thirds of an acre it may be possible for the occupier to dispose of his excreta without materially endangering the water-supply of the well, provided the latter is well puddled to a depth of six or eight feet outside the brickwork and cemented within; and provided, further, that the excreta are not buried within 80 feet of the well, and even then they should not be dug more than four inches into the ground, so as to enable the surface-soil bacteria to deal effectively with them.

“Fortunately in East Harling, at an average depth of 20 to 30 feet under the sand, lies the chalk, which, indeed, underlies the greater part of part of Norfolk, and which is one of the most important of water-bearing formations. Into this chalk have recently been driven several tube wells, which have tapped a plenteous supply of potable water, a typical chemical analysis of which is as follows:—

		Grains per gallon.
Free Ammonia	..	.. .0009
Albuminoid Ammonia		.. .0014
Nitrates	..	.. 1.12
Nitrites	..	.. slight trace
Chlorine in Chlorides	..	.. 1.70

“At one position in East Harling curious circumstances have arisen, viz., in the neighbourhood of the Police Station. At the Police Station itself two tube wells have been driven to 100 feet (one having buckled) without striking water, yet next door to the Police Station there is a tube well which delivered water at 90 feet. This well was driven further to 102 feet, or about

80 feet into the chalk. The chemical figures of analysis are interesting, as follows :—

			Grains per gallon.
Free Ammonia	..	..	trace
Albuminoid Ammonia		..	·007
Nitrates	..	..	5·04
Nitrites	..	..	trace
Chlorine in Chlorides	..	..	10·10

“The curious point here is that the chlorine in this deep well is about double that found in a shallow well about the same position. The nitrates are also in excess. In connection with these wells I suggest that it is important to have bacteriological analyses made, and to conduct some simple experiments with fluorescein or common salt, in the hope of elucidating the explanation of these curious facts. As they stand they point to oxidised sewage pollution.

“The Thetford Rural District Council has not been inactive in the matter of the water-supply of East Harling. About three years ago they had the water of every well in the parish submitted to a chemical sanitary analysis, the reports of the Analyst shewing the amounts of free and albuminoid ammonia, nitrates (and nitrites), and chlorides found in grains per gallon. On the Analyst's report certain wells were condemned, and printed notices have been placed over these wells to say that the water is unfit for human consumption.

“Further activity has led to the driving of many tubular wells into the subjacent chalk, and altogether many hundreds of pounds have been spent in this way, and the water so obtained from 38 borings have now satisfied the Rural District Sanitary Authority. These wells are driven from 40 to 80 feet into the chalk, or to a total depth of over 100 feet from the surface. The owners of 8 other cottages have made arrangements with adjoining proprietors to utilise their wells (approved), but there are yet some properties which have not yet satisfied the Council as to their water supply.

”I have been given to understand that the rateable value of the parish is £3,059, and that a 1d. rate produces about £8.

“A few years ago Messrs. Mornement and Ray roughly estimated the cost of providing a water supply from the highest O.D. point in the neighbourhood at a rough capital cost of £2,500, and an annual cost of £312. The latter figure would mean apparently a rate of 3s. 3d. for 30 years, and, after redemption, of 1s. 3d. in perpetuity. (I am indebted to the courtesy of Mr. Mornement for these estimated figures.)

“One of the chief difficulties in connection with the water supply of a straggling village is the length of mains required to supply only a few houses or the house of a principal ratepayer situated at some little distance from the main part of the village. I understand that it has been estimated that mains alone in the parish of East Harling would cost £1,000.

“Since the tube wells have been sunk at East Harling, tapping a pure chalk water, the water supply of the village as a whole is now better than in the majority of other villages in the County.

“As regards remaining shallow wells, the access of surface water should be prevented by clay puddling them for 9 inches round the well, to a depth of at least 6 to 8 feet) outside the brickwork, which should also be cemented within. No collection of manure or other decomposing material or cesspit should be permitted within 80 feet of a well.”





## Sewerage and Drainage.

Man is naturally a gregarious animal; but when civilised man lost his nomadic instincts and settled down to live in large numbers in particular spots, year in and year out; he made for himself sanitary trouble which could only have been averted by knowledge, experience, forethought, and wise expenditure. We who live at this stage of this country's history inherit the mistakes as well as the accumulated wisdom and experience of our ancestors.

Conditions exist in the majority of our Norfolk Urban and Rural areas which cannot make for health at any time, and which constitute a grave menace to health in the event of epidemic diseases acquiring a foothold in the communities referred to. I do not say insanitary conditions are the primal cause of infectious diseases, but they certainly tend to foster and perpetuate them.

The usual reply to any attempt to secure satisfactory betterment of such conditions is "Lack of finances"; "The village or town cannot stand the expense"; "It will mean a shilling rate, and that cannot be entertained"; and the result is Nothing is done, or a little money is practically wasted on some ineffective "improvement" or feeble experiment.

Often bitter experience comes along and teaches that it would have been better to have that shilling rate, or even five-shilling rate, rather than the Nemesis which has followed the continued neglect of the hygienic gospel. There are small towns of 2, 3, or 4,000 inhabitants without proper drainage, or with very unsatisfactory sewerage arrangements. They have areas where small, mean houses are overcrowded on a small area, with no or insufficient garden space for the disposal of refuse or for common comfort. They have no provision for the isolation of a case of infectious disease occurring in such an area; no means even for the effective disinfection of infected garments and articles after the disease has run its course. The water supply is frequently from ill-constructed shallow wells, unpleasantly approximate to foul privy pits. It is true that to put these matters right will require a considerable amount of money, and often a bold destruction of insanitary property—which may happen to be the property of some poor widow who lives on the mites she receives in rent—which is so small that nothing can

be put aside for repairs. An unsparing operation is here indicated, and the well-to-do philanthropist given the opportunity of making it up to the poor owner. Communal interests should take precedence of individual interests in matters of public health.

The following extracts are from the Reports of the District Medical Officer of Health:—

*Aylsham*.—"Several sewer outfalls have been cleaned out when found necessary. Improvements in the drainage system of Reepham, Aylsham and Coltishall have been made. Twenty nuisances connected with private drains were dealt with during the year."

*Blofield*.—"The greater number of villages are without public drains, the slop water as a rule being disposed of on the gardens. The Acle and the Blofield town drains continue to serve the purpose for which they were constructed without giving rise to nuisances. The outlet of the Freethorpe drain is within a few yards of a row of three cottages, and I consider it a danger to the health of the persons living in these cottages. The pipes should be carried some distance further.

"The Damgate drain, Acle. In January a cesspool-polluted pool of water, covering just an acre of garden land in Damgate, and threatening the pollution of wells, was the cause of a serious nuisance. An old drain which had become blocked as it passed under the road was re-laid and the water conveyed through it to the marsh dyke. This nuisance is now not likely to recur.

"Privies and ashpits. A very large proportion of the total number of insanitary conditions met with in a rural district are the result of improperly constructed privies. The work of dealing with this class of nuisance has been made easier by the provision of printed copies of plans for both pail and surface-bin privies. During the year 46 privies have been either built or reconstructed on proper lines. Ten privies have been repaired."

*Depwade*.—"In Harleston the sewer has been further extended in the Needham Road; 4 houses have been connected.

"38 drains have been repaired or renewed; 32 new drains have been laid down; 6 houses have been connected with sewers; 17 privies have been improved by alteration; 11 privies have been put in repair; 12 cisterns have been cleaned, repaired, or covered in.

“Complaints have been received of untrapped gulleys on main and bye-roads in Pulham Market. It is hoped that modern street gulleys will be substituted for the present obsolete and inefficient traps.”

“The Beck at Harleston and water courses at Dickleburgh have been thoroughly cleaned out.”

*Docking*.—Not reported on.

*Downham* (Shouldham).—“In June a portion of the dyke opposite the school was piped and filled in, largely at the kind voluntary expense of the adjoining landlord. Two other gentlemen also rendered valuable assistance whilst the work was being carried out.”

Stoke Ferry.—“The sewer was cleaned out in January. In December a catch-pit at the top of Station Road was sealed and a street gully fixed.”

Hilgay.—“One open gully has been abolished and a street gully fixed. 71 drains found defective and rectified.”

*Erpingham*.—“Mundesley is well drained into a containing tank, which is discharged by releasing the valves at the turn of the tides, by means of outfall pipes to beyond low water mark, ordinary tides. All houses are connected therewith in the area of the sewer. Some cottages with pail closets it would be advisable to alter to water closets and connect up. At the remaining houses cesspools are emptied by the public contractor.

“Overstrand is well drained, every house being connected, the sewers carried by outfall pipes to the sea, beyond low water mark.

“West Runton also has a system of sewage established, which is treated before discharge by the outfall into the sea, and a further extension of the sewer, to connect up some new houses, is about to be laid.”

Holt is well drained to a sewage farm with percolating beds, and additional land has been provided as a further means of treatment.

Portions of the Parishes of Cley, Aldborough, Northrepps, Trunch, Weybourne, Thornage, and Gresham are provided with pipe sewers for slop purposes.

In Mundesley, Cley, Overstrand, and a portion of East Runton, public scavenging of house refuse, etc., is done by contract.

In the rural villages, where large gardens exist, the vault type of privy is used, but in more confined areas the pail system has been substituted.



*Flegg E. and W.*.—"There is no regular system of drainage in the District. Earth closets with pails to ensure frequent removal are now in general use.

"For this to be a success, it is very necessary to have the closets and other house refuse systematically emptied and removed to a proper ground to be buried. This applies especially to the larger villages, where the houses are more numerous and the garden space not so extensive, and limited. It naturally follows after several years the ground becomes polluted, and in consequence dangerous to the health of the public. Therefore, where necessary, I strongly advise the Council to have proper carts to carry out the work; this, in my opinion, would be the easiest way of solving the difficulty.

"In the Village of Runham a great improvement is being carried out in doing away with the foul-smelling pond, situated in the centre of the Village, which has been a source of danger to health of the inhabitants for some time."

*Forehoe.*—Not reported on.

*Henstead.*—14 complete new drains were provided to existing properties. 28 drains were repaired, trapped, and ventilated. 21 drains were unblocked and cleared. 11 foul ditches were cleansed. 1 urinal was provided.

*Loddon and Clavering.*—Except for a few houses in Loddon, there is no system of drainage; the majority of the houses have their own cess-pits, and all the cottages now have the pail system. The pail system works excellently in the smaller villages, where each cottage has a fair-sized garden, but in Loddon itself there are many houses, especially in the old Market Place, where there is either no garden, or only a very small one, with the result that the occupiers have nowhere to bury their excreta, and the pails often overflow; it was a matter of great surprise to me that during the past hot summer we did not have more illness in Loddon. There is no doubt that a proper system of scavenging for the town of Loddon ought to be adopted; then we should not have people emptying their pails in the churchyard and should not run the risk of having repeated the Typhoid outbreak of 1895.

*West Lynn.*—Not reported on.

*Freebridge Lynn.*—Ditto.

*Marshland*.—"There is no system of sewage disposal, the houses being drained to cesspools. The excrement disposal is by means of deep covered privies, which are frequently allowed to become very offensive. A system of pail closets, and the appointment of public scavengers to attend to them, would be best for this District."

*Mitford and Launditch*.—"The drainage in Litcham is still a difficult point. I dealt with this in my reports for 1907 and 1908. The existing very defective system is in bad repair, and ought to be entirely abolished. Inspector Read and I presented a scheme in 1907 which was not approved by the L.G.B.; and the scheme proposed by a sanitary engineer, at the order of the L.G.B., would have cost three times as much and appeared to the Council quite impossible, as the whole cost would fall on the village, who now have to pay a scavenger, and rebel at that.

"Lyng requires some system of dealing with slops as reported last year. Inspector Read and I made a very careful survey of the village and took levels with a view of constructing a sewage disposal scheme, but we found the levels would not allow of any method of carrying the drains away from the village and dealing with the effluent."

*St. Faith's*.—Not reported on.

*Smallburgh*.—"During the year by request of the Guardians I prepared a block plan of all the Workhouse Buildings, showing the position of all the drains on the premises. While taking measurements I found that some portion of the drains was defective. This has been remedied, and a reconstruction effected whereby all the sewage is now discharged into the one settling tank and thence through the filter beds. All the drains on the Workhouse premises are now, I consider, in a very satisfactory condition. There is only one improvement which I think ought to be made, that is to construct a small cistern near the discharge of the overflow pipe, to lay a drain in the open ditch, the property of the Rev. F. Jickling. This ditch is very foul and offensive as the result of fallen and decayed leaves. A new soiled-linen washhouse, with a porcelain wash tub, has also been constructed on the premises, a great improvement on the old one in respect of sanitation."

*Swaffham*.—Not reported on.

*Thetford*.—There is no system of sewerage or drainage in the District.



*Walsingham.*—“ The main sewers in the parishes have been examined and repaired when necessary. The principal system of excrement disposal throughout the District is the pail system; in five parishes this is undertaken by the Council under the supervision of the Sanitary Inspector, the remainder by the occupiers.

“ In cases where a privy vault or midden is condemned owing to its proximity to a dwelling or water supply, pails are being substituted, and this has been done in several cases during the year. I am glad to report that the appointment of a scavenger in Blakeney has proved a success; all the privy vaults and middens have been abolished and their place taken by pails, of which 165 are dealt with by the scavenger, and also 133 dust-bins, and general sanitary condition of the village being much improved. A scavenger has been appointed for Melton Constable.”

*Wayland.*—“ Many minor improvements have been made in such matters as the cleaning out of offensive drains and ditches, the improvement of some, and the conversion of other privies to the pail system. A serious complaint was received from the village of Banham, with regard to the offensive condition of an open sewage ditch and a large moat through which the drain passed. I visited the place and found an appalling stench, and that the matter required immediate attention. Your Council appointed a Committee to enquire into the best means of abating the nuisance. The result has been that the open ditch has been done away with as a sewage drain, a piped drain being substituted, not connected with the moat, which has been cleaned out, and the whole nuisance abated. This is a good work accomplished, for I am given to understand that the moat and ditch have been a source of offence to the neighbourhood every summer for years past.

“ At Attleborough, there was a great nuisance caused by an open ditch receiving the sewage from a part of the town near the railway station, and eventually joining a stream at Hargham. During the hot, dry weather last summer, the stench from this ditch was very bad, and many complaints were received of the pollution of the stream. I went into this matter with the kind assistance of Dr. Nash, who came specially to investigate. Here, again, your Council appointed a Committee, who met Dr. Nash and myself, to inspect and report on the matter. Dr. Nash, after an exhaustive enquiry, recommended that an engineering scheme for the disposal of the sewage of



the whole town was the only satisfactory solution of the problem. When the wet, cooler weather prevailed, the nuisance abated. Nothing further has yet been done, and the matter continues under consideration and discussion."

## URBAN DISTRICTS.

*New Hunstanton.*—"The drainage is quite satisfactory."

*Sheringham.*—"The sewers are of fairly modern construction and work satisfactorily. No complaint has been received during the year, and the Urban District has been singularly free from Typhoid and Enteric Fever, Diphtheria, and epidemic Diarrhœa of recent years.

"In all cases of complaint, nuisance, or suspicious infectious disease, the Sanitary Inspector tests the drains. In cases of defect, notices are served if necessary and the defect remedied.

"The dustbins and pail closets which still exist are emptied twice weekly by the Council.

"The house refuse is conveyed by rail from Sheringham Station to a tip in an isolated spot in Weybourne.

"This method of disposal is a compromise effected between the proposed erection of a destructor and the carting of the refuse to a tip in Bodham; the site of the former gave rise to so many objections that it was abandoned, the latter was found to be costly on account of the distance, the result being that the old method is preserved on an altered site. The method is not ideal, but answers satisfactorily at present; and the Traffic Superintendent of the Railway Company has recently expressed his entire satisfaction with the manner in which the tip is conducted.

"The sewage, after a process of screening, is emptied into the North Sea, the outfall being well below ordinary low-water mark."

*Swaffham.*—A large proportion of the surface-water from the yards, streets, etc., is carried by separate drains to ponds on the outskirts of the town, and the sewerage is carried by a system of sewer pipes, about four miles in length, to the Sewage Farm about two miles from the town, and after being treated by Aluminite Ferric it flows to the beds and settles away in trenches. On the farm lucerne and mangolds are grown.

*North Walsham.*—"There is no system of sewers. The surface drainage of the town is by open channels and drains, which convey the surplus rain water, waste water, household slops, etc., into the larger drains, running eventually into the canal which runs along the north-east boundary of the District. There is no system of dealing with this drainage before it reaches the canal, nor for the prevention of the pollution of the stream.

"There has been no alteration in the disposal of excrement. The contents of the closet pans are conveyed to a field at a distance from the town by the Council's night carts. I am still of opinion that this system is not entirely satisfactory, and that it would be much improved by a system of duplicate pans, whereby the pans could be cleansed and disinfected. There are about 760 pan closets in the town."

*Walsoken.*--"The working of the main sewers and smaller drains have kept up to their usual good standard, and especially is noted the improvement in New Walsoken; and I am looking forward to the time when you will be able to surmount the difficulty in extending the system to Kirkgate Street and its adjacent parts. Practically no complaint has been made of nuisances arising from these during the year, again showing the value of the ventilators recently erected."

*Wells.*—"There has been no alteration in the sewerage system during 1911, and very few complaints of nuisances have been made."

*Thetford M.B.*—"No further extension of the drainage system has been made during the year, but a new drain is under consideration for the Melford Terrace and Castle Street area."

*King's Lynn M.B.*—"Considerable attention has been given to the flushing and washing of the sewers."

## Housing and Town Planning, etc., Act.

Difficulties of interpretation have occurred as to what dwelling-houses come within the Closing Order Section (Sec. 17).

A converted railway carriage or other building of unusual construction is not necessarily in a state so dangerous or injurious to health as to be unfit for human habitation, and this is the criterion; but dwelling-houses so dirty, damp, dilapidated, or insanitary (including grave defects of site or construction, insufficient lighting and ventilation, defective drainage, etc.), would properly come within the meaning of this Section. The Act itself defines in addition certain other special dwelling-houses—such as back-to-back houses under certain conditions (Sec. 43) and underground rooms habitually used as sleeping-places under certain limitations.

Where the rental is under £16, houses which are simply dilapidated, but not insanitary, can be dealt with under Section 15, provided new contracts have been entered into since December 3rd, 1909 (the date of passing of the Act), which requires that landlords shall keep such houses reasonably fit for habitation in all respects. Though defective roofs and gutterings, windows, floorings, and unpaved yards, etc., may render a house not fit for human habitation, they are not necessarily dangerous and injurious to health to the extent of requiring Closing Orders. Every Closing Order must mention the right of appeal of owners to the Local Government Board. Where Closing Orders have been made under Section 17, it is the duty of the Sanitary Authority under Section 18 to proceed to secure demolition, if the houses have not been rendered "fit" within a period of three months.

Many Sanitary Authorities are carrying out their duties of inspection under the Act in a systematic and well-organised manner, as, for instance, is lucidly explained in Dr. Back's Report for the Aylsham Rural District. It is a pity Dr. Back was not able to report in like terms for the Blofield Rural District, for which he is also Medical Officer of Health.

The following extracts from, or references to, the District Medical Officers of Health Reports for the year 1911 indicate what action was taken:—



## URBAN DISTRICTS.

*Cromer.*—131 defects were found in 208 houses inspected—in most cases not of a very serious character—and 54 of these houses still required attention when the Report was written.

*East Dereham.*—Owing to the illness and death of the Sanitary Inspector in the early part of the year, there was not so much progress made as was wished. The Council have, however, appointed an Assistant Inspector to help with the work, and the M.O.H. hopes the whole town will be inspected during 1912. Altogether 65 inspections were made and 129 defects found, of which 42 were remedied at the time of the Report. Dr. Belding comments as follows :—

“The districts inspected first were naturally those that we considered required it most. Among the defects found, the first that strikes one is dampness. Of course all the houses built in recent years have to comply with the bye-laws, and damp courses are provided. In none of the houses inspected is there a damp course, and it is extremely difficult to see how this is to be remedied.

“If, as is sometimes the case, the trouble is due to defective guttering, porous walls, or overflowing water butt, it is a very easy matter to get that put right, but when the walls are soaking water from the subsoil, nothing short of fitting a damp course seems to be of any use.

“If the wall is cemented inside, with an air space, the water seems to draw up above it, and concreting the ground around the walls outside is only beneficial in certain cases.

“The sufficiency of closet accommodation is one that the Council have decided to strictly enforce. It is frequently urged that where only two people occupy a house they can share with their neighbours, and this has stood very much in the way of progress in recent years, but we have no guarantee that any given house will only have two occupants in a few months, and where two or even more houses share the same closet it is generally found that it is no-one's business that the place is kept clean. The general rule adopted is that a closet to every house is necessary to provide ‘efficient closet accommodation.’

“The old vault privy is, in the town area, necessarily ‘a nuisance and injurious to health,’ from its proximity to dwellings and from the difficulty of emptying the vault, there generally being no means of bringing the cart near the vault, and I am sure many cases of illness in children have occurred from their playing marbles or other games on the ground that has been polluted by the process of emptying these.

“Therefore, as far as possible, these are being converted to water closets, where possible, or to pail closets, which are emptied by the Council Scavengers.

“The refuse disposal is very unsatisfactory, as the same objections apply when decomposing matter is carried to the carts from large dustbins, to say nothing of having this accumulating for weeks near houses. I have advocated for some years the provision of suitable tins by the Council to facilitate emptying, and also to prevent accumulation on the premises. The Council have now agreed to largely extend this system, and with the inspection of the town they will provide tins where required.

“The ‘other defects’ chiefly include defective guttering and spouting, which in every case was ordered to be remedied.

“There were at the Census 73 empty houses, chiefly of the ‘Working Class’ type, so there is no necessity for more houses being built by the Council.

“Detailed information on this head is being collected for the ensuing year’s Report. The houses are on the whole very suitable for the occupants, chiefly artisans and agricultural labourers. The great difficulty we, in common with practically every other district, have to contend with is that while the limits of a family are elastic the wages are not, so that those with the largest families and the most expenses have the least money to spare for rent, and it is no use building large cottages for people who cannot afford to pay for them. There is always a great deal of comment in annual reports on the decreasing birth rate. Is the position of a labouring man with ten children an enviable one? His wages in this district, as calculated in compensation cases, *average* between sixteen and seventeen shillings a week, but during the winter months he is paid thirteen or fourteen. This does not enable him to pay a rent that will give a return on the capital necessary to



build him a suitable house. If we want the population to increase, and have the children decently housed, it surely would be to the interest of the community to contribute to the rent (in cases of large families) out of a general fund; so that it would stimulate building operations, by ensuring the rent being paid.

“We then could take reasonable action in cases of overcrowding, for what use is it to tell a man there are plenty of houses if he cannot hire them. When we serve a notice to abate overcrowding, all that is done is that two or three of the children are put out to sleep for a few weeks until the Inspector has called again, they then return home, and if they are worried again they move into another district.”

*Downham Market.*—There are 650 houses, average number of occupants 3·8. Dr. Wales reports:—“Our system has been to take first those houses which seemed most to require attention.” 96 houses were inspected and results recorded; action was taken in connection with 12 cottages, the required repairs being in hand at the time of report. Four cases of overcrowding were remedied. No closing orders were made, but the M.O.H. states that there are several cottages where such steps may have to be taken unless the owners carry out much structural alteration. Much improvement has taken place in the water supply to house and cottage property through the extension of the Wisbech Water Works Company’s mains to 60 additional houses during the year.

*Diss.*—No action was taken in 1911. Dr. Speirs reports a want for a certain class of houses. Further, that unless private owners care to build, the Council will have seriously to consider becoming landlords, especially when one considers the number of cottages which will eventually be condemned under the Act of 1909.

*Hunstanton.*—Dr. B. G. Sumpter says:—“The only accommodation that has to my mind been lacking is for workmen’s cottages in which they can live without having to let lodgings.” At the time his report was issued the Council were about to build six cottages towards meeting this want.

*Sheringham.*—Dr. Linnell reports slow improvement. A few cottages remain which are small and badly ventilated. Four dwelling houses were closed and four cases of overcrowding abated. “There is a scarcity of four-room cottages at a moderate rental.”



*North Walsham.*—Dr. Shepherd reports that the special district selected by the M.O.H. for inspection under the Act has been inspected, and a report submitted to the Council. Of 30 houses inspected the majority were found dirty and in want of small repairs. In one case overcrowding was found and remedied. No houses were found unfit for human habitation. The M.O.H. remarks that “The inspection of the houses has been a good thing, as some improvement in cleanliness has resulted from it, and many small repairs have been done by the landlords which but for the inspection would have been left undone.”

*Swaffham.*—Dr. A. W. Thomas reports 170 inspections and two houses condemned as unfit for human habitation. Nothing having been done since the closing order was issued, steps were being taken with a view of having the condemned houses demolished. Overcrowding is less. “Children are now lodged out and the population has decreased.”

*Walsoken.*—Dr. H. Groom reports the housing accommodation as ample. New houses continue to be built. Under the Act 262 houses have been inspected. The usual minor defects found were remedied under Notice in the majority of instances. The Sanitary Inspector reports that there are a number of cottages in Old Walsoken (especially in Kirkgate Street) where there is no provision for the reception of slop and yard drainage. Some of these yards are too small even to admit of the proper construction of cesspools. He concludes: “There are several cottages in this part of the Parish which will have to be dealt with rather strictly.”

*Wells.*—The M.O.H. reports that systematic inspection was not begun until the present year (1912).

*Thetford Borough.*—74 houses were visited, 20 statutory and 73 intimation notices were served. Six houses were closed, of which one was altered and reopened, two were demolished and are being rebuilt, two others partly demolished and rebuilt.

[During the present year (1912) the Thetford Town Council are about to erect 50 cottages under the powers conferred by the Housing Acts.]

*Borough of King's Lynn.*—Representations were made as to 27 houses by the M.O.H. and Sanitary Inspector. A large number were demolished, and the remainder put into habitable repair. The Health Committee inspected 49 houses, and the M.O.H. 128.

## RURAL DISTRICTS.

*Aylsham.*—“ The work connected with this Act occupies the greater part of the time of the Inspector. The plan adopted by the Committee has been to have a complete inspection made of each village, and the details of the sanitary condition of the cottages recorded on sheets under the headings set forth in Articles II. and III. of the Local Government Board Circular of the 3rd of September, 1910. Each sheet holds the descriptions of four cottages. When the inspection of any village is completed the sheets are placed in a portfolio marked with the name of the village. The general sanitary condition of the village, including the cottage accommodation, is then reviewed by the Committee. Whenever in the course of the inspection conditions are discovered which call for action to be taken by the Committee, the case is entered in the Inspector's Report Book, through which it is brought before the Committee at each of their meetings until the work necessary to put the cottage in a satisfactory state is done. The result of action taken is then chronicled in the appropriate columns of the sheet.

“ This systematic inspection of cottages brings to light many insanitary conditions which would otherwise never have occupied the attention of the Inspector. The occupiers of cottages, especially in those parishes where cottages are scarce, are generally disinclined to make complaints, and are content to live under conditions prejudicial to health rather than risk the inconvenience of moving. In many instances also the tenant is found to be indifferent to his sanitary surroundings, and sees no advantage in having proper provision made for the lighting and ventilation of his cottage, while he regards a damp wall as damaging to the wallpaper but not a danger to the health of himself and family. It is therefore only by systematic inspection, without waiting for complaints, that an improvement can be effected in housing conditions.

“ During the year 320 cottages have been inspected in the parishes of Barningham Parva, Belaugh, Coltishall, Marsham, Stratton Strawless, and Tuttington, but it is impossible in this Report to present a full account of the improvements effected in these six parishes.”

*Blofield.*—“ As stated in my Annual Report for 1910, sheets with headings corresponding with those given in Articles II. and III. of the Local



Government Board Order of September 10th, 1910, are ready for recording the results of the systematic inspection of dwelling-houses, and a list has been presented of 42 dwelling-houses, 'the early inspection of which is, in the opinion of the Medical Officer of Health, desirable.' I have also in the course of the year directed the attention of the Council to the fact that the provisions of the Act were not being carried out in the District.

"Discussions on the subject have been chiefly concerned with Part III. of the Principal Act, which has to do with the provision of new cottages in localities where it is found that the cottage accommodation is insufficient. I have endeavoured to explain the full scope of the Act, and have emphasised the great advantage of a *systematic inspection* of the District and the gradual collection of records of the sanitary condition of each cottage. As such a systematic inspection proceeded, defects in the construction of the cottages and their state of repair would be reported on, and the Council would take such action as they thought fit under Sections 15 and 17 of the Act. The water supply, drainage, privy accommodation, and any case of overcrowding discovered would also come under review, and when the records relating to any particular village were completed, there would be all the information at hand necessary to determine how far cottage accommodation was adequately provided for in that village.

"Under the circumstances it is evident that I am unable to include in this Report, as required by Article V. of the Order of the Local Government Board of September, 1910, information in a tabular form of the number of the dwelling-houses inspected and the result of such inspections.

"There were, however, three recommendations made for closing dwelling-houses 'in a state so dangerous to health as to be unfit for human habitation,' and in one instance a Closing Order was made.

"41 cottages were inspected, and of these 14 have been put into habitable repair."

*Depwade.*—"With the able assistance of Mr. Scarlett an excellent recording system has been installed in your District, the which is being faithfully carried out by your Inspector, and will eventually result in a valuable register of the houses and cottages in the sanitary area.



“ To give you a rough idea of the work that is being carried out under the Housing, Town Planning, etc., Act, I quote extracts from your Inspector’s diary :—

“ Four parishes have been systematically inspected, and a full sanitary record obtained as regards inmates, water supply, measurements, closet accommodation, drainage, conditions of premises, lighting, ventilation, dampness, cleanliness, refuse disposal, etc., etc., as follows :—

Parish.	Houses.	Rooms measured.
Roydon ..	107	.. 459
Pulham Market	183	.. 903
Bressingham ..	107	.. 484
Rushall ..	36	.. 155
	<hr/> 433	

“ Under the Section which compels the landlord to keep his property reasonably fit for human habitation 84 notices have been served—these notices have reference to damp walls, floors, defective roofs, insufficient light and ventilation, defective doors, dangerous conditions of ceilings, stairs, etc.

“ Four Closing Orders have been made—Hempnall 1, Pulham Market 3. The Hempnall property has since been placed in habitable repair, and there is every promise of the Pulham property eventually being made fit.

“ The work has been somewhat slow in execution owing to shortage of labour and weather conditions, but in the majority of cases the work has been put in hand.

“ One cottage at Bunwell was closed voluntarily : in quoting the letter received a rough impression of some of your Inspector’s work may be represented.

“ ‘ I have hired a house to go to at Michaelmas, but I am doubtful if it is large enough or really fit for me to go to, as I am in very weak health and people say they don’t think it fit for me to go into. The landlord has promised to have it done up. Would you be so kind as to see if you think it fit for me to go into, as there are seven of us and there is only two bedrooms and they are very small? I do not know of another anywhere, and I must leave here at Michaelmas.’

“This is one of the many demands upon your Inspector’s time. Of course he inspected the place, and found a few repairs were being done to an old cottage that for years had been used to keep ducks and fowls in; the floors of the bedrooms were caked with filth, and very damp and insanitary; a room intended for the sleeping use of the man was damp and insanitary, with a brick floor.

“The owner was interviewed, and agreed to cancel agreement and close the house.

“16 cases of overcrowding have been abated. 20 houses have been put into habitable repair. 5 houses condemned by M.O.H.”

*Downham.*—Full details are given as to housing conditions at Southery and Welney.

“Considerable improvement has taken place in the housing of the working classes, and the District will compare favourably with other Districts, but there undoubtedly exists in several villages a need for better houses and houses more suitable for larger families, not only in respect of sleeping accommodation, but in the matter of provision for the storage of food and the disposal of household refuse.

“The inspection of houses under the Housing and Town Planning Act, 1909, has been steadily proceeded with, and considerable improvements have been effected.”

*Docking.*—No Report.

*Erpingham.*—At Briston house-to-house inspection has been made and enquiries held, and the Council has decided to erect *three* pairs of semi-detached cottages.

At Edgefield house-to-house inspection and enquiry held. Council made Compulsory Order for the purchase of land for erection of cottages.

Plumstead has also been fully inspected; also portions of the parishes of Baconsthorpe, Barningham North, Gresham, Beckham, E. and W. Runton, Weybourne, Cley, Holt, Mundesley, Trimingham, Overstrand, and Southrepps.

*E. and W. Flegg.*—“The Housing and Town Planning Act of 1909 is in force in the District. Under the provisions of the above-mentioned Act inspection of the District has been undertaken under Section 17, it having

been decided by the Council to have a house-to-house inspection made of all premises of £16 yearly rental and under in this District, taking the parishes in alphabetical order; but where it was found that dwellings in other parishes to that which was in course of inspection, and would not under this method of procedure come under the Council's notice for some considerable time, were in such a condition as to be unfit for habitation, or had any nuisances existing thereon, such premises were to be immediately dealt with. During the past year the parishes of Ashby with Oby, Burgh St. Margaret, Billockby, and a part of Caister have been inspected, the number of premises dealt with being 167.

“In 26 instances it was found that the premises were in good condition, requiring nothing to be done, and in four cases nuisances were abated without notice being served. In the remaining cases it was found necessary to serve notices requiring certain works to be done.”

*Forehoe.*—House-to-house inspection now going on; eighteen new houses have been built in the parishes of Wymondham, Hingham, Cossey, Wicklewood, and Deopham. Eleven cases of overcrowding have occurred in Wymondham, Hingham, and Morley St. Botolph.

950 houses inspected in Wymondham, with the exception of those mentioned as being overcrowded, were all in a fair condition. There is vast room for improvement—more sunlight and air being needed and better bedroom accommodation.

Dr. Lack suggests that a small Committee of Inspection be formed by the Sanitary Authority, and that special inspections be made in each parish after the house to house inspection.

*Henstead.*—Overcrowding exists to a large extent, but only the worst cases have been considered. Two cases were dealt with—in one case some of the family had to obtain lodgings elsewhere, and in the other two cottages were converted into one. No houses have been reported as unfit for human habitation, but “if there was an adequate supply of healthy houses, many houses would be condemned which are now allowed to be inhabited.”

The Council are now erecting eight cottages in the parish of Hethersett, which should be fit for habitation this year.

*Loddon and Clavering.*—Housing and Town Planning Act not yet in force in District (1911).



*West Lynn.*—192 detailed inspections have been made, and fully confirmed my Supplementary Report in 1910.

*Freebridge Lynn.*—Systematic house to house inspections have been made in the following parishes:—Ashwicken, Flitcham, North Wootton, Roydon, Castleacre, Grimstone, Pentney, Westacre, Castle Rising, Harpley, South Wootton, West Bilney. Inspections have also been made in Gaywood, Great Massingham, North Runcton, Hillington, East Winch, Leziate, and Congham. In all 741 inspections have been made, and, resulting from these inspections, 87 houses have been repaired, 76 altered and improved, 3 closed voluntarily, and 28 are at present receiving attention. Principal defects found were dampness, insufficient light and ventilation, leaky and defective floors, and insufficient accommodation. 18 new houses have been built during the year—Flitcham 2, Gaywood 5, Gayton Thorpe 2, Pentney 2, Middleton 2, West Newton 2, Mintlyn 1, Westacre 1, Leziate 1.

*Marshland.*—“Under the Housing and Town Planning Act, 55 houses were inspected, chiefly in Terrington and Walpole. Two were condemned as quite uninhabitable. In one case a closing order was made, and in the other the house was closed without a formal order. Six houses were without a proper water supply. Five houses had bedrooms quite without ventilation—four not even a window. Five houses were exceedingly damp from defective condition of roofs. One damp from defective drain in yard. Three had insufficient privy accommodation. In each case the necessary repairs or alterations have been done or are being attended to.

“The District has been regularly inspected by the Sanitary Inspectors and myself and special visits made when necessary.”

*Mitford and Launditch.*—“Of the houses inspected, over 25 per cent. were damp. This dampness, in some cases, arose from defective gutters, spouting, or porous walls; this can be easily remedied, but in one village (Litcham) only 10 per cent. of the houses were damp; in another (Lyng) 33 per cent. suffered from this defect.

“Litcham stands on the side of a slope, and Lyng on flat ground just above the river level. The result is that the water rises by capillary attraction up the walls of the houses, and in many cases through the floors, as these frequently only consist of flat tiles laid on the ground. The difficulty

in dealing with the cases is so great that nothing is done. Concreting the floor and round the walls of the houses would in some cases reduce the trouble, but when the foundations practically stand in water, nothing but a damp course is of any avail, and this in many of the houses could not be fitted, for they are very old and built of flint stones, so that to try and fit a damp course would only demolish the building. It is a recognised thing that every house should have a damp course, and this is always part of a modern structure where any bye-laws are in force, but it seems to me that in a district like this, where practically no building is going on, something ought to be done to improve the condition of the existing houses.

“The ordinary wages of the agricultural labourer are from 12/- to 14/- per week, with extras in summer, bringing it up to an average of about 16/-. Now to allow a fair return on the capital invested, he would have to pay 3/- or 4/- per week for a suitable and sanitary cottage. This does not leave much to bring up a family on.

“The birth rate is falling every year. If the labourer with a large family has to be encouraged, and healthy children produced to grow up into healthy men and women, surely it is to the interest of the community to provide suitable homes for them. This, however, is not a local question, for the towns, the army, and the navy, draw largely on the agricultural districts and take our best from us.

“If houses are built by the District Council, how can the ones that want them most pay an adequate rent? If they do not, the loss falls on the District, and the District cannot afford it. The remedies I would suggest are:—(1) A subsidy of so much per head for every child, to go towards the rent, not to be paid to the parents. This would be calculated in the same way as income tax returns, and if, say, 10/- per child per annum were allowed on all children whose parents could earn less than £1 per week, we should have very little trouble with overcrowding. (2) All houses must have a damp course and cemented floors. In the case of existing houses allow a period of years in which to conform to this regulation. If 25 years were allowed, it would mean that individual enterprise would be stimulated, and at the end of that time we should have dry and healthy houses.

“The closet accommodation was defective or insufficient in 123 cases. In the 68 cases in Litcham a pail closet has been provided in every case of deficiency, and the privies converted to pail closets.

“In Lyng notices have been served to do the same, but these were not completed at the end of the year.”

*St. Faith's*.—Under the Housing and Town Planning Act, 1909, six parishes in the District have been inspected and records made.

*Smallburgh*.—During the year 12 cases of overcrowding reported; 6 occupants have left the dwellings. 15 cottages reported to be unfit for human habitation; 3 closing orders were made by the District Council.

[The houses erected by the Council at Horning and Happisburgh, alluded to in my Report for last year, were completed during 1911.]

“479 houses have been inspected, and the Inspector has given a great deal of time to this part of his duties. In such a large area, and with most of the houses being small and coming within the Act, a complete inspection must necessarily take some considerable time.

“There exists a widespread necessity for more and better cottages. An enormous number of cottages, even those in a good state of repair, have one or more damp walls, and this defect in bedrooms especially is, I consider, serious. Some are damp from porous walls, some because the gutters are dilapidated or non-existent and all the water from the roof runs down the walls. Few if any of the older cottages have any damp course, many having been converted from barns or stables.

“All the houses have a sufficiency of air space without, but too many have a deficiency within. The cleanliness of surroundings depends entirely on the occupants, and as the majority have gardens which they cultivate, there is not much fault to be found except now and then owing to manure heaps being placed too near the well or dwelling.



“Six new cottages erected by the Council at Horning and six at Happisburgh, during the summer, were occupied by the tenants at Michaelmas. They are soundly built at a minimum cost, £1,628 including land, and though not beautiful from an artistic point of view, they should serve their purpose well. Each cottage has about 20 rod of garden and is let at or near £7 per annum. If only blocks like these could be erected in every village where wanted and let at £5 to £5 10s. per annum, the labourer would have little cause for complaint as to his housing accommodation. But I fear this wish is Utopian.

“No. of dwellings inspected under Section 17 of the Act of 1909 .. 479

“No. of dwelling-houses dangerous or injurious to health as to  
be unfit for human habitation .. .. 15

“No. of representations made to Local Authority with a view to  
the making of Closing Orders .. .. 15

“No. of Closing Orders made .. .. 3

“No. of dwelling-houses defects in which were remedied without  
Closing Orders .. .. 8

“No. of dwelling-houses which, after making Closing Orders,  
were put in fit state for human habitation .. .. 0

“New Bye-laws have come into force this year to regulate Tents, Vans, Sheds, etc. During certain periods of the year these van dwellers have been numerous in some districts, remaining a long time encamped on the commons and wastes of the Manors. They are generally overcrowded, and not always sanitary in their habits, and a possible means of introducing infectious diseases to the district.

“I must again call the Council’s attention to the necessity of providing some not too stringent Bye-laws to regulate the erection of new houses, especially the drainage thereof.”

*Swaffham R.*—“ During the latter part of 1910, a systematic inspection of cottages was begun in accordance with the provisions of the Housing and Town Planning Act, 1909. The inspection has been continued, 518 cottages having been visited. The following is a summary in tabular form :—

Parish.	Number of Houses Inspected.	Number found Dilapidated.
Ashill .. ..	114	38
Holme Hale ..	43	19
Newton-by-Castleace ..	13	4
North Pickenham ..	8	7
Saham Toney .. ..	177	65
Southacre .. ..	14	9
Sporle .. ..	128	44
Stanford .. ..	21	11

“ The principal defects found in all the cottages were dampness due to defective roofs, absence of guttering or rain water pipes ; insufficient light and ventilation ; lack of proper sanitary convenience. Thirteen closing orders were served, relating to cottages, situated in several parishes, which were unfit for habitation. The owners of two of these immediately carried out the necessary repairs ; one was demolished voluntarily ; one is used for purposes other than human habitation ; two remain unoccupied ; and in the remaining cases repairs are being done or are to be done when accommodation can be found for the tenants elsewhere.

“ During the early part of last year I made representations to your Council as to certain cottages at Great Cressingham which were injurious to health. After you had considered the matter, I proceeded, accompanied by the Inspector of Nuisances, to the village, and met by appointment the owners or their agents, pointing out those repairs and alterations most urgently required. In several cases these repairs have been effected ; and undoubtedly general improvement is taking place, but it appeared that further housing accommodation was required in the parish. Accordingly

your Council appointed a Committee of your Members to enquire into this question. This Committee held a public meeting at Great Cressingham, and recommended that, although only one application was made for a new cottage, steps should be taken to provide some dwellings. Your Council considered this report in October, and appointed a Committee to prepare a scheme, which is to be presented in 1912.

*Thetford R.*—No detailed information given, on account of the death of Dr. Harris, M.O.H.

A systematic inspection is being carried out. Sixty-nine inspections made by the Sanitary Inspector during last year.

*Walsingham.*—Little progress was made in 1911, owing to a change in the Inspectorship and an excessive incidence of zymotic disease in the latter part of the year. 46 dwelling-houses were inspected, principally in the Saxlingham district. One was represented as unfit for habitation and a Closing Order made, while defects in 10 others were remedied without making a Closing Order. It was the Medical Officer's intention to go through Great Ryburgh systematically this year.

*Wayland.*—Out of a total of 275 cottages inspected 74 were found to be defective. The chief defects found were dampness and leaky roofs, absence of guttering and badly fitting doors, bad ventilation, defective privies, and deficient bedroom for the average family.

The following tabular statement constitutes a summary of inspections carried out in the various Sanitary Districts in Norfolk during 1911 under Section 17 of the Housing Act, 1909.



TABULAR STATEMENT OF INSPECTION OF HOUSES UNDER  
HOUSING ACT, 1909.—URBAN DISTRICTS.

	No. of Parishes systematically inspected.	No. of Dwelling-houses inspected.	No. reported as dangerous or injurious to health.	No. of representations to the Local Authority.	No. of Closing Orders made.	No. of Dwelling-houses where defects remedied without Closing Orders.	No. put into a fit state after the making of Closing Orders.
Thetford M.B. .. ..		74	73	6	6	67	3
The Thetford Town Council are about to erect 50 cottages.							
King's Lynn M.B. ..		128		27		Details are given of 14 houses repaired, 18 demolished, and demolition orders issued for 12 more.	
Cromer .. ..		208	2			25	
						81 found defective.	
East Dereham .. ..		65					
Downham Market ..		96	0	0	0	12	
Wells .. ..						repairs in hand.	
						Inspection not started until 1912.	
North Walsham .. ..		30	0	0	0	6	0
Walsoken .. ..		263		0	0		
Swaffham U. .. ..		170	2	2	2		0
Diss .. ..		100				In Committee stage at time of Report.	
Hunstanton .. ..						The Council about to build 6 workmen's cott'gs.	
Sheringham .. ..		50	4	4	4	2	

RURAL DISTRICTS.

Aylsham .. ..	6	320	7	7	7	33	1
Blofield .. ..	4	41	3	3	1	14	
	(Not systematic)						
Depwade .. ..	4	423	5	4	4	20	1

RURAL DISTRICTS—*continued.*

	No. of Parishes systematically inspected.	No. of Dwelling-houses inspected.	No. reported as dangerous or injurious to health.	No. of representations to the Local Authority.	No. of Closing Orders made.	No. of Dwelling-houses where defects remedied without Closing Orders.	No. put into a fit state after the making of Closing Orders.
Downham .. ..	2 & others.	548	50	8	8	30	1
Docking .. No particulars.		Act not put in force				affecting 16 houses.	
Erpingham .. ..	15	Not stated.					
Erection of cottages decided upon in							
E. and W. Flegg .. ..	4	167	Not stated in				
Forehoe .. ..	1	950	11				
Henstead .. ..	0	Council are erecting 8 cottages in					
Loddon and Clavering ..	0	Act was not put in force in					
West Lynn .. ..	1	192	No further particulars given.				
Freebridge Lynn ..	19	741	194				
Marshland .. ..	2	55	21	2	1		
Mitford and Launditch .	6	211			0		103
St. Faith's .. ..	6	570	3	0	0	4	0
Smallburgh .. ..		479	15	15	3	8	0
12 cottages erected by the Council.							
Swaffham R. .. ..	8	518	13	13	13		2
8 new houses erected.							
Thetford R. .. ..		69	No further details.			M.O.H. de-	
Walsingham .. ..		46	1	1	1	10	0
Wayland .. ..		275	74				

The above table is constructed from the Reports of the District Medical Officers of Health, and indicates that the information required is not given in tabular form in some of the Reports. This is very desirable in future. Towards the close of 1910, I drafted two forms for tabulating the information required under the Housing and Town Planning Regulations issued by the Local Government Board in September, 1910, and sent a copy to each District M.O.H., suggesting that a tabular statement on the lines of the shorter one should be used for the Annual Report. If this is done in future, the information furnished to the County Council will be more satisfactory, and will lessen the amount of trouble now necessary to ascertain what is being done in some Districts.

In reply to enquiries addressed to the Clerks of the Councils, I have received the fullest information from the E. and W. Flegg Sanitary Authority, where detailed minutes are printed showing fully what action is being taken by the Authority.

In the Docking and Loddon Rural Districts the Act was not put into force until this year (1912), and the same remark applies to Wells U.D.

It is satisfactory to note that a good many cottages have been put into better habitable repair, and that certain Councils (Erpingham, Henstead, Smallburgh, Swaffham Rural, Thetford Borough, and Hunstanton Urban District) have already erected, or have definitely arranged to erect, cottages.

As regards existing cottages, the problem is by no means easy, for dampness is a defect exceedingly common and, as pointed out by Dr. Belding, one not readily remedied in many instances. When incidentally discussing this question at a conference I had with the District Medical Officers of Health, it was generally agreed that this defect was common in all the Sanitary Districts, and one M.O.H. said that if dampness were made the criterion of unfitness for human habitation he would have to condemn over 40 per cent. of the houses in his District.

There can be no doubt that what is required is a supply of better cottages with at least three bedrooms. In some of the cottages I have myself visited the bedroom accommodation is pitiable. I have instances in mind



where there are supposed to be two bedrooms, but these are only intercommunicating spaces in the roof of the cottage, beds being placed close under the slope of the roof. In such cases, quite apart from the actual cubical area of the attic, all the hygienic principles of ventilation are infringed.

Then as to the insufficiency of bedroom accommodation for a large family, one sometimes finds, for instance, a father and mother and one or two infants in one small room directly communicating with another in which are two bedsteads, the one bed occupied by, say, two adolescent youths and the other by two girls, also past childhood. Under such circumstances how can we be surprised at much of the immorality which is known to exist, or that whole families fall ill when one is attacked with an infectious disease?

The facts are obvious and easy to state, but it is not so easy to state the effective remedy—the financial problem always looms large, and the constituent members of an Authority very rarely see eye to eye in housing problems. It must not be imagined that cheap cottages will solve these. On the other hand there is much to be said in favour of the view expressed by an old Norfolk labourer who, commenting on a change in the ownership of the farm on which he is engaged, said that he hoped the new master would “height” the rents. This would tend to increase the wage of the agricultural labourer, and better houses could be built and kept in better repair if the rents were reasonable.

On the whole one cannot but feel that progress will be very slow until the housing problem is treated as a national one rather than parishonal—the cry of the local ratepayers is still in the land.

# Factories, Workshops, Workplaces and Homework.

		No. under Inspection.	No. Certified for Lime Washing.	No. of Insanitary Conditions found and dealt with.	Homework Lists received from Employers.	Other matters.
RURAL DISTRICTS.						
Aylsham	..	112	..	3	..	..
Blofield	..	52	..	..	..	..
Depwade	..	..	..	..	..	..
Docking	..	..	..	..	..	..
Downham	..	153	..	7	2	5
East and West Flegg	..	..	..	..	..	..
Erpingham	..	..	..	3	..	..
Forehoe	..	..	..	..	..	..
Henstead	..	65	..	3	..	..
Loddon and Clavering	..	..	30	..	..	..
West Lynn	..	..	..	..	..	..
Freebridge Lynn	..	106	..	49	2	..
Marshland	..	75	..	3	..	2
Mitford & Launditch	..	112	..	7	..	3
St. Faith's	..	48	..	15	..	..
Smallburgh	..	..	..	7	..	..
Swaffham	..	31	..	5	..	..
Thetford	..	59	..	7	..	3
Walsingham	..	135	..	1	6	..
Wayland	..	70	..	17	..	..
URBAN DISTRICTS.						
Cromer	..	..	..	..	..	..
East Dereham	..	69	..	1	6	2
New Hunstanton	..	17	..	..	..	..
North Walsham	..	44	..	3	..	..
Downham Market	..	28	..	..	14	..
Diss ..	..	43	..	..	..	..
Swaffham	..	32	..	..	..	..
Sheringham	..	37	..	1	..	..
Walsoken	..	..	..	..	..	..
Wells ..	..	..	..	1	..	..
King's Lynn, M.B.	..	211	..	26	91	3
Thetford, M.B.	..	..	..	..	..	..

## Pollution of Rivers and Streams.

My former Reports have indicated the chief existing sources of pollution of rivers and streams in Norfolk. The rivers in Norfolk happily do not suffer the gross pollution so too frequently found in the great manufacturing districts—nor are there any very large towns along the Norfolk river courses.

The River Wensum, forming the water supply of the City of Norwich, needs to be as jealously guarded as possible. The two main existing sources of pollution are relatively unimportant, and occur many miles above the intake—and probably all detectable trace of their existence is lost prior to this. At Fakenham the pollution is by the sewerage of this small town, minus, however, solid excremental matter. The Local Government Board having approved of a scheme for dealing with the sewage of Fakenham by sedimentation, followed by land treatment—this source of pollution will, in the course of a year or so, cease to exist.

At East Dereham, where the effluent of the town's sewage passes into a sub-tributary of the Wensum, a greater degree of purification has been effected by the introduction of slate beds and an increased area of filters. Farms and dwelling-houses in the villages nearer Norwich constitute some pollution, which becomes the more risky the nearer the discharge is to the point of intake, and every effort should be made to prevent the direct discharge of sewage matters into the river. The Water Company of course sediments and filters the river water before pumping it into the mains.

As it is proposed to utilise the River Bure for the water supply of Great Yarmouth, all removable sources of pollution should be removed.

Dr. Wright, M.O.H., Smallburgh, reports the pollution of the Bure at Hoveton St. John's and at Horning as comparatively slight and easily remedied.

Dr. Back states that at Coltishall, to which attention was drawn in previous reports of mine, the more dangerous pollution from W.C.'s and



overflowing cesspools has been cut off; but *slop* waters still enter a dyke which communicates with the river. There is no alteration to report in connection with the Thet, the Wissey, and the Ouse.

The Forehoe Rural District Council has applied for power from the Local Government Board to put in force the Pollution of Rivers Act because of the bye-products from a factory discharged into the river at Wymondham.

Four samples of the Tiffey stream at Wymondham, and six samples of the River Yare at Postwick Reach were analysed by the County Analyst during 1911.

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## Food Supplies.

### MILK SUPPLIES IN SANITARY DISTRICTS.

#### DAIRIES, COWSHEDS, AND MILKSHOPS.

These have to be reported upon by the District Medical Officers of Health, while the County Council administers the Food and Drugs Acts. The samples taken by the County Council Inspectors are submitted to the County Analyst for a chemical analysis as to the constituent parts, to note whether the milk is genuine, or watered, or deficient in fat—but no bacteriological analyses are made to note the relative proportion of dirt or the presence of tubercle bacilli.

Now that an organised crusade is to be started against Tuberculosis, this source of infection in some cases, especially in young infants, should not be overlooked, and arrangements should, in my opinion, be made for the systematic investigation of certain samples of milk for the bacillus of Tuberculosis, as well as for checking the means taken for securing cleanliness in the production of milk for domestic use. This could be carried out in a County Public Health Laboratory.

The following quotations are from the Reports of the District Medical Officers of Health :—

*Aylsham R.D.*—“ Special attention was directed during the year 1908 to the subject of Dairies and Cowsheds, and in my Annual Report for that year is a description of the defects generally found in these premises. During the year inspections have been made and improvements effected, notably in the Whitwell dairy. Much, however, still remains to be done before the premises are brought up to the standard demanded by the Bye-laws in force in the District.”

*Blofield R.D.*—“ No active measures have been taken during the year with regard to the improvement of Dairies and Cowsheds. Many premises, owing to the construction of the cowsheds, are unable to be kept in accordance with the Bye-laws in force in the District.”

*Deprwade R.D.*—“ Much still remains to be done in the matter of Dairies and Cowsheds; improvement is, however, well marked, and you have granted 7 licences under the Dairy and Cowsheds Act.”

*Docking R.D.*—“ 2 Cowsheds and 57 Dairies and Milkshop Inspections.”

*Downham R.D.*—“ Regulations with respect to Dairies and Cowsheds have been in force in the district since 1905. During the year 3 applications were received for registration. There has been 1 removal, leaving 15 on the register. In six cases, however, registration does not apply, since the milk is used on the premises and is not sold except to neighbours.

Number of cows on registered premises	..	166
Number of inspections made	.. ..	20

“ In addition to the above, 41 Cowsheds, chiefly in the occupation of Small Holders, have been inspected.

Number of cases on unregistered premises	..	148
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“ 22 Verbal notices as to cleanliness, all complied with.”

*East and West Flegg R.D.*—“ The Dairies, Cowsheds, and Milkshops registered under the Order of 1885 were, during the year, periodically inspected. With but few exceptions I found them being kept in a wholesome and cleanly condition, the few exceptions showing a laxity on the part of the occupiers in complying with the Order in respect to linewashing. During the year 4 persons applied to be registered under the Order.”

*Henstead R.D.*.—" At the end of the year 1911, the register contained the names of 32 persons, an increase of 1 for the year. The Cowsheds and Dairies in the District have been inspected from time to time, and with very few exceptions they are kept in a wholesome and cleanly condition. 5 notices were served to abate nuisances arising from defective drainage and improper keeping of Swine in Cowsheds. Great improvements have voluntarily been made by the owners of several Cowsheds during the year. 1 large dairy farm has had erected new substantial Cowsheds, well lit, paved, drained, and ventilated. On another farm the old Cowsheds have been pulled down and a new good one has been erected. On 2 others the Cowsheds have been repaved and drained."

*Loddon and Clavering R.D.*.—" The various Dairies and Cowsheds have been systematically inspected and 25 notices were served during the year. The milk supply is pure and there have been no infectious cases traced to its contamination. Early in the year milk sent from one dairy to London was found to contain Tubercle Bacilli. A Veterinary Inspector came down and examined the cows, and found one suffering from Tuberculosis of the Udder. This fact was reported to me, and I was requested to try and stop this dangerous infection. The only true remedy would be to order the slaughter of the cow and indemnify the owner, but we have no power to do this, and very naturally the owner refused to kill the cow; she was isolated, and eventually disappeared, and perhaps even now is spreading Tuberculosis."

*West Lynn R.D.*.—" Dairies and Cowsheds have been inspected and found in a satisfactory condition."

*Freebridge Lynn R.D.*.—" Registered cowkeepers premises have been inspected and found satisfactory."

*Marshland R.D.*.—" Inspected and found satisfactory."

*Mitford and Launditch R.D.*.—" 6 inspections of Dairies and Milkshops, and 10 inspections of Cowsheds."



*St. Faith's R.D.*—" 19 inspections of Dairies and Milkshops and 40 inspections of Cowsheds." Dr. Long says:—" Although I am by no means satisfied as yet with the conditions of all the Dairies and Cowsheds in the District, they have, nevertheless, improved considerably during the past few years; and considering that they are nearly all very old buildings,, adapted only to modern requirements, and are most in the hands of small farmers, it is impossible to get very much done to them. One Dairy, at Horsford 'Crown,' was found to be in a very unsatisfactory condition, but I am glad to be able to report that the landlord has made the structural alterations suggested to him.

"To condemn a Dairy or Cowshed in sparsely populated areas, as are some parts of the District, may result in cutting off the milk supply altogether from the inhabitants of several square miles, so that although one has to try and insist upon the regulations relating to Dairies and Cowsheds being carried out, one often has to err on the side of leniency as to the less of two evils."

*Smallburgh R.D.*—Dr. Wright writes:—"The milk supply is of good quality, but it is often insufficient, and to the poor unobtainable. Many cowkeepers prefer to 'set their milk' and to keep up their butter custom to selling their milk. Possibly they may fear bad debts, but selling milk must pay better than making butter."

"Structural alterations to improve ventilation and cubical space made in 1 Cowshed."

*Swaffham R.D.*—" 56 Dairies on the register, all in good condition; improvements effected in 3 dairy farms by the laying down of concrete floors in the Sheds."

*Walsingham R.D.*—" 66 inspections of Dairies and Milkshops, and 60 inspections of Cowsheds."

*Wayland R D.*—" Regularly visited and found in good condition."

No reference in Reports for Erpingham, Forehoe, and Thetford Rural Districts.

## SLAUGHTER-HOUSE AND MEAT INSPECTION.

*Walsingham.*—The bye-laws for slaughter-houses have been adopted in 17 parishes. No carcasses found tuberculous. The Sanitary Inspector holds a certificate in Meat Inspection. Echinococcus in a sheep's liver and Pyæmia in a bovine liver were discovered and the organs destroyed.

*Aylsham.*—"No bye-laws with respect to slaughter houses have been adopted for the district, nor do I think the model bye-laws of the Local Government Board, which are framed on the assumption that sewers and a public water supply are available, would be of much service in this district. The objectionable feature most often met with in slaughter-houses is a blood hole placed immediately outside the building and directly connected with it. As it is a common practice to hang meat in the slaughter-house, and this blood hole is always found partly filled with putrifying blood, it would seem not unlikely that the meat should become tainted. My experience is that the most satisfactory arrangement in country districts, where there is no public water supply and no sewer, is to have no drain whatever leave the slaughter-house. The blood and washings should be collected in a fixed boiler sunk in the floor of the slaughter-house, and from this they should be baled out and removed in a water cart immediately after each slaughtering.

*Blofield.*—But few slaughter-houses ; although the position of these is not all that could be desired, they are kept in a satisfactory manner. Bye-laws in force.

*Depwade.*—Regularly visited and satisfactory.

<i>Downham.</i> —	Number on register ..	32
	Number of inspections ..	105
	Number of defects found ..	6
	Number of defects remedied ..	6
	Number of carcasses examined ..	214

The meat has been of a very good quality throughout the year. One bullock's liver was found to be diseased ; this was surrendered and destroyed.

Two slaughter-houses have been erected during the year. Five slaughter-houses are now provided with tanks on wheels for the removal of refuse."

*Henstead*.—13 inspections. Two defects found and remedied.

*Loddon and Clavering*.—6 slaughter-houses inspected.

*Freebridge Lynn*.—The Gaywood slaughter-house is now satisfactory. Two carcasses of sheep ordered to be destroyed. No Tuberculous carcasses were found.

*Marshland*.—Inspected and found satisfactory.

*Mitford and Launditch*.—20 inspections. No action necessary.

*St. Faith's*.—A new slaughter-house has been built in Horsford. 6 slaughter-houses cleansed.

*Smallburgh*.—14 slaughter-houses and meat shops inspected periodically.

*Swaffham*.—2 slaughter-houses inspected.

## URBAN DISTRICTS.

*M.B. of King's Lynn*.—Situation of 13 slaughter-houses given.

MEAT DESTROYED.—Forfeited meat: 368 st. of beef, 15 st. of pork, and 19 st. of mutton. Seized meat: 5 st. mutton. Total, 407 st.

SEIZURE OF UNSOUND MEAT.—2. In one instance where two legs and one loin of mutton were found and seized as unfit for human food, prosecution resulted in a £3 fine, including costs.

Of carcasses of forfeited meat, 3 carcasses of beef were affected with general Tuberculosis, and 6 carcasses of beef with localised Tuberculosis. One carcase of pork was condemned for general Tuberculosis. Other carcasses forfeited were one of beef (Parturient Fever), one of beef (suspected Anthrax), one of pork (Pleuro-Pneumonia), and some instances of diseased organs such as liver and spleen.

The estimated number of animals slaughtered in the Borough was 21,391, of which 2,400 were beasts, 2,241 pigs, and 16,750 sheep; of which 11,000 sheep were for other towns.



*M.B. of Thetford.*—No seizures were made.

*Sheringham* has no slaughter-houses.

*North Walsham.*—No arrangements have been made for the inspection of meat, nor is there an Inspector with special certificate of meat inspection.

*Walsoken U.D.*—In only one instance was it found necessary to condemn meat.

*Wells.*—No unsound food was detected, and the slaughter-houses are reported as kept in a satisfactory condition.

## TUBERCULOUS MILK.

In January, 1911, I received information from the County Medical Officer of the London County Council that under that Council's (General Powers) Act of 1904, he was sending a Veterinary Inspector to a farm at Aldeby, whence he had reason to suspect that tuberculous milk was being sent to London.

I arranged to meet the Inspector, and with him inspected two cowsheds, one of which was extremely dirty. In this cowshed the Veterinary Inspector discovered a tuberculous cow. The owner was warned not to mix the milk of this cow with other milk, and I communicated with the Medical Officer of Health of the Loddon and Clavering Rural District Council, drawing his attention to the facts. Unfortunately, the Order *re* Tuberculosis in Cows, issued by the Board of Agriculture in May, 1909, which would have given power to deal with the tuberculous cow, having been subsequently withdrawn, there was no legal means of preventing the owner disposing of the cow, which he did at the first opportunity.

I would recommend that this Council should draw the attention of the Local Government Board to this anomaly—there being, so far as I know, not even any power to compel the owner to accurately state what he has done with the cow.

FOOD AND DRUGS ACTS.—RESULTS OF PROSECUTIONS ORDERED  
BY THE PUBLIC HEALTH COMMITTEE IN 1911.

WESTERN DIVISION, Inspector W. B. Barry—

<i>Nature of Sample.</i>	<i>Nature of Adulteration.</i>	<i>Results of Prosecutions.</i>
Baking Powder ..	Deficient in Carbonic acid gas	Dismissed
Milk ..	Added water $5\frac{1}{2}$ %	Fined £1 and 10s. costs.
Milk ..	Deficient in fat 27 %	Fined 5s. and 10s. costs.
Milk ..	Added water $5\frac{3}{4}$ %	Fined 10s. and 10s. costs.
Milk ..	Deficient in fat 9 %	Fined 1s. and 10s. costs.
Milk ..	Added water $11\frac{3}{4}$ %	Dismissed summons, served on wrong man.
Milk ..	Added water $34\frac{1}{4}$ %	Fined £2 and 10s. costs.
Milk ..	Added water $8\frac{1}{2}$ %	Fined £1 and 10s. costs.
Milk ..	Added water 28 %	Fined 10s. and 10s. costs.
Milk ..	Boracic Acid 3.67 grs. per pt.	Dismissed (Sec. 3). Not injurious to health.
Milk ..	Added water 8 %	Fined 10s. and 12s. costs.
Milk ..	Deficient in fat 10 %	Fined 5s. and 12s. costs.
Milk ..	{ Deficient in fat 10 % Added water 10 % }	Dismissed on payment of 14s. 6d. costs.
Butter ..	4.27 % excess of water	Fined 2s. and 14s. costs.
Baking Powder ..	Deficient in Carbonic Acid Gas ..	Fined 5s. & £2 12s. costs.

CENTRAL DIVISION, Inspector John Ryley—

Milk ..	Devoid of milk fat 15 %	Fined 10s. and 10s. costs.
Milk ..	Devoid of milk fat 30 % and added water $5\frac{1}{2}$ %	Fined £2 & 12s. 6d. costs.
Milk ..	Devoid of milk fat 7 %	Fined 2s. 6d. & 17s. 6d. costs.
Milk ..	Refusing to sell a sample	Fined £5 and 10s. costs.
Milk ..	Devoid of milk fat 7 %	Fined £1 & 14s. 11d. costs.

EASTERN DIVISION, Inspector A. Robinson—

Sweet Spirit of Nitre	99 % deficient in Ethyl nitrite	Fined 1s. and 10s. costs.
Milk ..	Devoid of milk fat 39 %	Fined £2 & 14s. 2d. costs.
Milk ..	Devoid of milk fat 25 %	Fined 5s. and 13s. costs.
Milk ..	Devoid of milk fat 21 %	Fined 5s. and 3s. costs.
Milk ..	Added water 5 %	Fined 5s. and 2s. costs.
Milk ..	Added water 8 %	Fined 5s. and 13s. costs.
Milk ..	Devoid of milk fat 11 %	Fined 1s. and 3s. costs.
Milk ..	Devoid of milk fat 8 %	Fined £1 & 14s. 2d. costs.

## Isolation Hospital Accommodation.

I have in previous reports described the amount of Isolation accommodation in Norfolk, which is next to nothing. Cromer<sup>1</sup> alone possesses an Isolation Hospital which conforms with the requirements of the Local Government Board, but King's Lynn has one good brick pavilion properly furnished; Hunstanton has a brick-built cottage kept ready for emergencies, while the Forehoe R.D. utilise a cottage at Wicklewood for the reception of some cases. Walsoken shares a wood-and-iron hospital with the Wisbech (Cambs) U.D.C. Thetford Urban and Thetford Rural possess an iron joint hospital for Small-pox, as also do Swaffham Urban and Rural Districts—but neither has been utilised for ordinary infectious diseases, so far as I know.

There is no doubt the difficulties of providing satisfactory isolation hospital accommodation for infectious diseases in Norfolk are very great, the population of the Administrative County averaging only about one person to four acres.

Such are the peculiar conditions in Norfolk that I am quite in accord with those District Medical Officers of Health who have felt unable to advise their Sanitary Authorities, as individual Authorities, to provide anything in the form of an expensive isolation hospital. Apart from the Municipal Borough of King's Lynn, the Urban Districts are all so small that even if they were to combine with only two or three adjoining Rural Districts, the combined population under the circumstances existing would not in normal conditions have a sufficient number of cases of Diphtheria, Scarlet Fever, and Enteric Fever to keep a decently equipped hospital going all the year round.

Indeed, my calculations, based on the infectious diseases notification returns, lead me to think that, on an average, the whole Administrative County could barely contribute enough patients to keep two hospitals of from 80–100 beds each in sufficient use to justify their erection, unless the isolation of Measles or of Phthisis was contemplated in addition to the three diseases for which isolation accommodation is usually provided. From the point of view of efficient administration, I am not in favour of small isolation hospitals as an attempt to cover the needs of the whole of a rural district; a better alternative in my opinion being, in the absence of combination of



districts, for each district to provide *isolation cottage* accommodation (not isolation hospitals) for groups of villages, as outlined in my Annual Report for 1909, page 32.

The only really effective practical remedy is the provision of a properly equipped hospital for a sufficiently large area of combined districts. The Isolation Hospital Act, 1901, provides that a Sanitary Authority, having possession of a hospital for the reception of the sick, may, with the sanction of the L.G.B., transfer it to the County Council for appropriation to a combined district under the Isolation Hospitals Act, 1893, as an infectious diseases hospital, and the County Council may contribute to the expenses of such a hospital.

The Cromer U.D.C. possesses the nucleus of what might prove a serviceable Isolation Hospital for a combined district. It is situated at Roughton, in the rural district of Erpingham, and it would be an advantage and simplify the provision of one such hospital could the various authorities concerned agree to apply the provisions of the Isolation Hospitals Act, 1901, to this hospital. The terms would of course include an equitable proportion of the capital and maintenance charges among the constituent authorities.

Not the least important of the buildings which constitute a satisfactory fever hospital is the administrative block.

Fortunately, the hospital already in existence at Roughton already possesses this important administrative building, which would, however, require to be enlarged to serve the needs of a larger district if the general isolation accommodation was increased. Such enlargement would naturally have to be at the expense of the joining-in Councils.

At Roughton there also exists at present a permanent brick pavilion with six beds at 2,000 cubic feet per patient.

An isolation hospital is more efficient and economical when provision is made for isolating two or three different infectious diseases at the same time.

For a large combined district with such object in view further pavilion or ward accommodation would provisionally be needed as follows:—

- (a) A pavilion of 2 wards, containing 12 beds in each ward, to accommodate 24 patients.
- (b) A pavilion of 2 wards, each containing 8 beds.

Such further provision would enable cases of three different infectious diseases to be isolated at the same time at the hospital.

There is already in existence at the Roughton Hospital a laundry, mortuary, and disinfection block for the disinfection of infected bedding, etc., by steam. There is also a good and constant water supply. The total initial cost, including the administrative block as it stands, was £3876 10s. 1d.

Allowing in full for this, and for two additional pavilions, providing for 40 additional beds, and for contingencies, motor ambulance, etc., to meet the need of, say, 6 Urban and 10 Rural Districts, then among the contributing districts no single district need probably have to pay more than £1000 towards the capital cost, and that district would have the permanent use of 8 beds under proper administration. [The figures here given are approximate and tentative only—but should cover permanent buildings of reinforced concrete, such as sanctioned by the L.G.B. for a sanatorium at Claydon Workhouse, near Bradford.]

The larger the number of patients admitted, it generally follows the smaller will be the proportionate maintenance charges per head.

The present lack of isolation hospital accommodation necessitates a serious loss of Grant to the County Education Authority, through the necessity of excluding a whole family of say six or seven children for six or eight weeks, because one child happens to catch Scarlet Fever or Diphtheria and has to be nursed at home. Were the child first taken ill removed to a hospital, it would not, as a rule, be necessary to exclude the other children for more than a week or ten days. This applies to every school in the County.

Though the scattered population fortunately militates against an epidemic getting out of hand, the lack of isolation hospital accommodation for immediate removal of a first case falls very hard upon individual families. Reference to the District Medical Officers of Health reports indicate how frequently infectious disease attacks many members of a family through the impossibility of isolation in a cottage. In the more densely populated villages and towns there is a greater risk of epidemic prevalence, as *e.g.* Diphtheria prevalence in Raynham in 1911 and in North Walsham 1912.

Should the formation of Joint Isolation Hospitals be at any time entertained, it might be suggested that the County could be divided into the

following areas, for the combination of Urban and Rural Sanitary Authorities for the establishment of such Joint Isolation Hospitals:—

- I. Sheringham and North Walsham Urban Districts : Blofield, East and West Flegg, Aylsham, St. Faith's, and Smallburgh Rural Districts. Such hospital would probably be best situated in the neighbourhood of North Walsham. [Cromer has already provided its own isolation hospital.]
- II. Diss Urban District; Forehoe, Henstead, Depwade, and Loddon and Clavering Rural Districts. The hospital would probably be best at or near Long Stratton.
- III. Thetford and Swaffham Urban Districts ; Thetford, Swaffham, and Wayland Rural Districts. The hospital about the neighbourhood of Little Cressingham.
- IV. King's Lynn and Downham Market Urban Districts ; Marshland, West Lynn, Downham, and Freebridge Lynn Rural Districts. The hospital in the neighbourhood of King's Lynn.
- V. East Dereham and Wells Urban Districts ; Docking, Walsingham, and Mitford and Launditch Rural Districts. The hospital situated between Fakenham and Dereham.

The following are extracts from Reports of District Medical Officers of Health on this subject:—

*Aylsham.*—It has been found by practical experience that an isolation hospital must be in a constant state of preparedness for the reception of patients, and that the financial resources of a Rural District are not sufficient to meet the expense.

*Blofield.*—"The district has no isolation hospital. A report on the subject was presented by me for your consideration in December. The object of the report was to show that it would be inexpedient to provide an isolation hospital for this district alone. Such a hospital would be either an inefficient one or would involve an unwarrantable expenditure for its maintenance. The



report suggested the provision of a sufficient number of hospitals distributed throughout the County, each supplying the combined needs of three or four districts, to which patients might be conveyed by motor ambulance. This proposal was the subject of a circular letter to the several Rural District Councils in the County and the replies received were very generally in favour of the scheme. The Sanitary Committee of the Norfolk County Council were also invited to give the proposal their consideration."

*Depwade*.—"There is no Isolation Hospital in the district, the cost of building, maintaining, and providing sick-transport for the same, has, I believe, received some of your attention."

*Docking*.—"Several cases this year, notably the case of Scarlet Fever at Burnham Sutton, and some of the cases of Diphtheria accentuate the need for an Isolation Hospital. I think I am right in saying the County Medical Officer of Health favours a scheme of one hospital for a large area, with a motor ambulance—personally I am more inclined to a small isolation cottage for a few adjacent villages. I cannot give an opinion as to the difference in cost, but I believe the latter scheme is feasible and I feel sure would be more acceptable to the parents of children sent in."

*Downham*.—A tent with two available beds for small pox.

*Erpingham*.—There is no isolation hospital.

*East and West Flegg*.—There is no isolation hospital.

*Forehoe*.—Utilises a cottage at Wicklewood.

*Henstead*.—No isolation hospital.

*Loddon and Clavering*.—In January, 1912, it was decided by eleven votes to ten, five not voting, that 'no isolation hospital be built in this district.' The Medical Officer of Health favours the provision of either a local one or a joint County Hospital."

*Marshland*.—No accommodation exists.

*Smallhurgh.*—The Medical Officer of Health again calls the Council's attention to the necessity of providing some means for the isolation of infectious cases where it is impossible in the patient's home.

*Swaffham.*—A Joint (Urban and Rural) Hospital for Small-pox only.

*Urban Districts.*—The provision made for Cromer, New Hunstanton, King's Lynn, Walsoken, Thetford, and Swaffham has been previously reported upon. The other Urban Districts also remain "in statu quo" without isolation hospitals.

## Cancer.

80 deaths were attributed to Malignant Disease in the 12 Urban Districts, with an estimated total population of 60,942; and 301 deaths in the 20 Rural Districts, with an estimated total population of 260,729; giving for the Administrative County of Norfolk a total of 381 deaths in an estimated population of 321,671 persons in 1911, being a Cancer death rate of 1·18 in 1911, as compared with 1·23 in 1910, 1·10 in 1909, 1·12 in 1908, and 1·16 in 1907.

The actual number of deaths attributed to Cancer in the Administrative County of Norfolk for the past five years is as follows :—

	1907	1908	1909	1910	1911
Rural Districts ..	300	286	284	321	301
Urban Districts ..	67	69	64	76	80
	<hr/> 367	<hr/> 355	<hr/> 348	<hr/> 397	<hr/> 381

The statistics of the Registrar-General indicate that the total mortality from Cancer in 1910 was the highest on record for England and Wales, amounting to ·96 per 1000 persons. It will be observed that for years past the Norfolk figures have been in excess of this figure.

There are no available data at present to account for this.

## Vaccination, 1911.

The following are extracts from the District Reports :—

*Aylsham R.D.*—Primary Vaccinations, 285 (births 363). Children exempted under “Conscience Clause,” 52.

“These figures, when compared with those relating to previous years show still further increase in the proportion of children exempted under the operation of the ‘conscience clause.’”

*Blofield R.D.*—Primary Vaccinations, 173. Exemptions under “Conscience Clause,” 68.

“The record for the last ten years shows how the conscience of the district has quickened with regard to vaccination. It will require an epidemic of Small Pox with much suffering and many deaths before the public will re-awaken to a sense of the importance of Vaccination.”

*Downham Market U.D.*—Vaccination continues to be neglected whereby a fruitful soil is being prepared for the next epidemic of Small Pox.”

*Walsingham R.D.*—“The outlook in the event of the importation of Small Pox in the district is becoming proportionately graver each year.”

Number of births, 356. Number of Vaccination exemptions, 120.

*Downham R.D.*—Number of births, 414. Number of exemptions, 172.

*East and West Flegg.*—1910—Births 137. Successfully vaccinated, 109. 1911 (January to June)—Births 134. Successfully vaccinated, 92.

“The increase of conscientious objectors is not a matter for congratulation . . . it clearly points to the fact that the district is not so well guarded against the ravages of the fearful scourge of Small Pox.”

*Loddon and Clavering.*—“The number of exemptions increases.”

*West Lynn.*—“Vaccination is in abeyance.”

*St. Faith's.*—1910—Births 224. Vaccinated 125. Conscientious objectors 81. January to June, 1911—Births 106. Vaccinated 61. Conscientious objectors, 40.

*Swaffham R.D.*—127 Primary Vaccinations. 59 exemptions.

*Wayland.*—194 Primary Vaccinations. 82 exemptions.



## Nuisance at Postwick.

I reported fully on this in my last Annual Report. The following are extracts from the Reports of the District Medical Officers of Health of Henstead and Blofield Rural Districts for the year 1911:—

*Henstead.*—"The Norwich Sewage Farm and refuse heaps have caused a great deal of anxiety during the past year owing to the numerous complaints which have been made; the stench from the sludge trenches constituting a much more pronounced nuisance than the refuse deposit. No fewer than 12 inspections were made to the farm by the Sanitary Inspector, and I also visited the refuse heaps and sewage farm on six occasions, twice accompanied by the County Medical Officer of Health, and two Committees, consisting of the Chairman, Vice-Chairman, and several others, also visited the heaps on 2nd May and 15th September.

"Owing to a complaint having been made by the Bramerton Parish Council to the Norfolk County Council of the nuisances arising from the farm and refuse heaps, an enquiry was held at the Shirehouse, Norwich, on the 10th of February, when representatives from the Norfolk County Council, Henstead District Council, Blofield District Council, and Bramerton Parish Council were present, and the matter was fully gone into.

"At the Council Meeting held 28th February, it was decided that Counsel's advice be obtained respecting what action could be taken to prevent these nuisances arising on the Sewage Farm. Counsel's advice having been obtained, it was found that the Council had no powers to deal with the nuisance arising from the sludge trenches, although no doubt this was the real cause for complaint, and although it was pointed out that certain action might be taken with regard to the deposit of refuse, yet it was a questionable point that as this deposit was situated on the Sewage Farm were they part of the Sewage Farm, and if so, could the refuse be classed as sewage?

"On 23rd February, Dr. Nash, the Sanitary Inspector, and myself visited the farm and refuse deposit, and found that the sludge was then being experimented upon with lime, 4-lbs. of lime being used to each 100 gallons of sludge, which, after 1½ hours treatment, produced a fair cake.

“On 2nd May, a Committee of your Council, accompanied by Dr. Nash, the Sanitary Inspector, and myself, visited the refuse deposit; the day was fine and very little wind blowing. On this occasion practically no smell or nuisance could be detected, although we stopped some time. The heaps were found satisfactorily turfed over. Although a fresh cargo of refuse arrived during our visit, yet when the hatches were removed no nuisance could be detected. The Contractor also informed the Committee that the deposit of fish offal, which no doubt caused most nuisance at the heaps, had now been stopped, the fish offal going elsewhere to manufacture artificial manure. On 7th June the heaps were visited at 8 p.m. and found satisfactorily covered over for the night.

“The Committee also met at the deposit on the 15th September, which was a squally day and a strong wind blowing. The heaps were found in similar condition as on previous visit, with the exception that owing to the drought the grass was scorched up instead of being in a green condition.

“The Corporation are still taking steps to remove the cause of nuisance from the Sewage Farm, and I believe a contract has been entered into with a firm to erect a building and machinery for treating the sludge.

“There is no doubt that the conditions under which the refuse is now deposited is much improved, as, owing to the steps taken by the Council, the Corporation have constructed a dock in which to unload the barges, also turfed over top and sides of heaps, stopped depositing fish offal, and also taken precautions to avoid as much nuisance being caused as possible.

“S. H. BURTON.

“Feb. 24th, 1912.

*Medical Officer of Health.”*

*Blofield.*—“During the summer I made several visits to Postwick and inspected the refuse heap on the opposite side of the river. Although the season was exceptionally favourable to the multiplication of flies there was no serious repetition of the plague which made the village notorious the previous summer. Nevertheless flies were distinctly more numerous in Postwick than in other parts of the district, and in most of the cottages fly traps of various designs were kept in active operation.



“ The nauseating smell arising from the sludge trenches at the Norwich Corporation Sewage Farm was complained of again and again, and it is evident that the parish suffers as much as ever from this very serious nuisance. On August 9th, at the request of the Chairman, I attended a meeting of the Postwick Parish Council which was called for the discussion of this nuisance. The subsequent report to the District Council is perhaps of sufficient interest to be included in this annual record of the sanitary condition of the District. It is as follows:—

“ ‘ Postwick.

“ ‘ Nuisance from (a) Norwich Sewage Farm.

(b) Heap of Norwich House Refuse.

“ ‘ Gentlemen,

“ ‘ I consider it my duty to once more direct your attention to two very serious nuisances affecting the health of the inhabitants of Postwick and other parishes in your District. The most important of the two arises from a heap of house refuse deposited on the bank of the river Yare by the Norwich Corporation. The other consists in the nauseating smell from the sludge trenches of the Norwich Sewage Farm. The smell under certain atmospheric conditions is carried for several miles from its source of origin, and wherever it penetrates it makes the life of the inhabitants unbearable.

“ ‘ Within the last few days I have had occasion to make two visits to Postwick in connection with the case of scarlet fever reported to you to-day and, on making enquiries in the village, I find that the nuisance both from the sewage farm and from the refuse heap are as pronounced as ever. During the early part of the summer, however, house flies have been less in evidence than during the same period last year, but within the last few days they have again appeared in such large numbers as to constitute a plague.

“ ‘ I have visited the refuse heap and find that more care than formerly is being taken to cover the refuse with mud, but as the unloading of the barges from Norwich is continuous, a large surface of filth is necessarily always exposed. River water without the admixture of any disinfectant is being thrown from a hose on the heap. This, no doubt, to some extent, diminishes the amount of dust, but can have little effect on the larvæ of the



flies. An altogether inadequate amount of disinfectant is being used. There were a considerable number of flies seen about the heap but the office and the shed used for the men's meals, being now guarded by gauze doors, are not swarming with flies as was the case last summer. There is evidence of a large number of rats working in the heap.

“ ‘I found that several children had been suffering from attacks of sore throat, and in some instances diarrhoea. I am unable to say definitely that these cases of illness and the case of scarlet fever are the result of infection derived from the refuse heap, but it is at least not improbable that this is the case. In the City of Norwich there has recently been a weekly average of about twelve fresh cases of scarlet fever, and the interesting experiments of Dr. Monckton Copeman and Mr. Howlett conclusively proved that flies from the refuse heap visited Postwick in considerable numbers. It requires only one fly to carry a large consignment of microbes.

“ ‘On August the 9th, by the invitation of the Chairman, I attended a meeting of the Postwick Parish Council. The opinion generally expressed at this meeting was one of surprise and indignation that, while the existence of a serious nuisance, dangerous to life, was admitted on all sides, not one of the public health authorities appealed to had taken steps for its abatement.’ ”

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## Meteorological Notes for 1911.

The influences of weather on health are established, and records are therefore of undoubted use and interest. I have abstracted some of the following data from the admirable observations made at Norwich by Mr. A. W. Preston, F.R.Met. Soc. :—

Mean barometric reading for the year	..	29·794 ins.
Air Temperature—		
Maximum (August 9th)	..	93·5 deg.
Minimum on grass (Feb. 1st)	..	14·3 „
Mean temperature of year	..	50·5 „
Above average by	..	1·8 „
Mean relative humidity (9 a.m.)	.	76 p.c.
Rainfall—		
Total fall at Norwich	..	26·67 ins.
Above average by	..	0·92 „
No. of days on which rain or snow fell		197
Bright sunshine recorded during	..	1895·6 hours
Number of sunless days	..	68

GENERAL REMARKS.—An abnormal year. During January and February the weather was generally mild, but two sharp frosts occurred on February 1st and 2nd. March was generally rough, cold, and cloudy. Early part of April very cold. On April 14th a period of fine weather set in which practically lasted with but few brief intervals until the end of September. May was fine and warm—rain fell on six days only, but very heavy on the 13th and 14th. June was a fine summer month, with heavy rains at the end of the month. Between July 6th and September 12th the heat was extraordinary; the shaded thermometer exceeded 80 deg. on 25 days. In the week ending August 2nd the maximum temperature exceeded 80 deg. daily. On August 9th, 93·5 deg. were registered, the highest record Mr. Preston had made during his 29 years of observation. Two periods of absolute drought prevailed—one from July 2nd to 24th, and the other from August 1st to 19th. In the early part of September great heat again prevailed, the thermometer exceeding 80 deg. on six days and 90 deg. on one day. The latter part of the month was cooler and more seasonable. October and the first half of November were mild and pleasant—the latter half of November was colder. December was very wet and mild.

The hours of sunshine in the year were no fewer than 312·9 above the officially computed average for this District.

## Summary of Sanitary Work in the County in 1911.

### RURAL DISTRICTS.

From the Returns made by the Sanitary Inspectors, so far as they are given, it would appear that in the 20 Rural Districts 458 complaints were received, 2513 nuisances detected without complaint, 1713 notices served; and 3648 nuisances abated. Seven summonses were taken out resulting in 6 convictions.

7074 Cottages were inspected, and 1169 Workshops. There were 357 inspections of Slaughterhouses, 441 of Bakeshops, 1090 of Dairies, Cowsheds and Milkshops.

64 filthy houses were cleansed and 378 disinfected. 96 cases of overcrowding were abated and 537 houses placed in habitable repair. 49 houses were closed.

Water certificates were sought in connection with 156 houses erected or rebuilt and 134 certificates were granted.

Wells were sunk or improved supplies of water were obtained in 72 instances. In addition, 144 Wells were cleansed or repaired, 14 Wells were closed.

91 houses were connected up with sewers, and 123 with water mains. Improved Privy Accommodation was secured in 652 instances, and 50 W.C.'s were supplied with water.

66 instances of animals improperly kept were satisfactorily dealt with. 194 samples of water were taken for analysis.

16 Canal Boats were inspected in St. Faith's Rural District.

### URBAN DISTRICTS.

From the Returns made by the Sanitary Inspectors, so far as they are given, it would appear that in the 12 Urban Districts 241 complaints were received, 446 nuisances detected without complaint, 1818 notices served, and 2284 nuisances abated. Three summonses were taken out resulting in two convictions.

With the exception of King's Lynn, 1166 Cottages were inspected, and 146 Workshops. There were 33 inspections of Slaughterhouses, 46 of Bakeshops, 68 of Dairies, Workshops and Milkshops.



Thirteen filthy houses were cleansed and 55 disinfected. Twenty-one cases of overcrowding were abated and 288 houses placed in habitable repair. Twenty houses were closed.

Water Certificates were sought in connection with 55 houses erected or rebuilt, and 8 Certificates were granted and 3 deferred.

Wells were sunk or improved supplies of water were obtained in 5 instances. In addition, 2 Wells were cleansed or repaired, 1 Well was closed.

Forty-eight houses were connected up with Sewers, and 33 with Water Mains.

Improved Privy Accommodation was secured in 103 instances, and 14 W.C.'s were supplied with water.

Eleven instances of animals improperly kept were satisfactorily dealt with. Nine samples of water were taken for analysis.

In the Municipal Borough of King's Lynn the report of the Sanitary Inspector shows that 3220 inspections were made with regard to Cottages, Lodging Houses, Slaughterhouses, Bakehouses, Dairies and Milkshops, Cowsheds and Workshops, 33 Privies and W.C.'s repaired, 23 seizures of unsound meat, and 23 Canal Boats inspected.

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#### ERRATA.

*Page 19, line 12. For "were" read "was."*

*Page 27, line 29. For "particular" read "particularly."*

*Page 29, line 27. For "These" read "There."*







